DELHI POLYTECHNIC
LIBRARY

CLASS NO.......................

BOOK NO..

ACCESSION NO....

BH12PPDelhi—5,000—3-8-51—GIBPS

INDIAN ECONOMIC PROBLEMS:
PRE-WAR, WAR AND POST-WAR

INDIAN ECONOMIC PROBLEMS: PRE-WAR, WAR AND POST-WAR

PART I

PRE-WAR PERIOD

by

BRIJ NARAIN

Professor of Economics,
Sanatana Dharma College,
Lahore

Rupees FIVE only.

1944
ATMA RAM & SONS
EDUCATIONAL PUBLISHERS & BOOKSELLERS
MOHANLAL ROAD (H.O.) ANARKALI KASHMERE GATE
LAHORE LAHORE DELHI

Published by
Brij Lal Pury
of
Messrs. Atma Ram & Sons
Booksellers, Publishers & Printers
Lahore & Delhi.

Printed by
Ram Lal Pury
at the
University Tutorial Press,
Lal Chand Street, Anarkali
Lahore.

PREFACE

The work has been divided into three Parts. Part I (the present volume) deals with pre-war economic problems; Part II is a study of our war economy, and Part III discusses post-war reconstruction in the light of the Bombay Plan.

A new feature of the book is the use of statistical methods in the interpretation of facts and for the study of trends. Economics is a statistical science, and it would be desirable to equip every student of economics, reading for the Bachelor's Degree, with some knowledge of statistical methods. These methods are employed in official reports which students are expected to read. For example, the chain index is used for the study of industrial profits in the annual *Review of the Trade of India*. The trend of birth and death rates and of mortality from certain diseases is indicated in the *Census of India, 1941, Vol. I* (Tables) by straight lines easily fitted by the method of least squares, and the Gompertz curve has been used for smoothing fertility rates.

Any one, with a little patience, may learn to fit all the curves given in this book.

A knowledge of curve fitting is not included in the University economics syllabus; still I hope that the curves will interest some readers. The explanation is given in appendices or foot-notes, which can be easily skipped by the non-mathematical reader.

I am greatly indebted to Prof. R. K. Sud of the English Department of my College for very kindly reading the proofs.

LAHORE

BRIJ NARAIN

2nd July, 1944

CONTENTS

CHAPTER I. **The Population of India. Census of 1941** 1

1. Method. The 'one night' theory, 1. 2 Communalism and the census, 1. 3. New features of the census, 2. 4. Rationalisation of the census, 2. 5. Area, and distribution of the population, 3. 6. Density, 4. 7. Causes of growth of density, 5. 8. Growing pressure on agricultural resources, 8. 9. Emigration, 8. 10. Movement of the population, 9. 11 New cycle of growth, 11. 12. Birth and death rates. Mortality from cholera, small pox and plague, 12 13. Fertility, 16 ; Gross reproduction rate, 17 , Net reproduction rate, 18. 14 Gross and net reproduction rates for other countries, 19. 15. Age-composition of the population, 20. 16. Scarcity of females, 24. 17. Marriage, 25. 18. Expectation of life, 26. 19. Curve of survivors, 26, 20. Town and country, 28. 21. Literacy, 32. 22 Community, 32. 23. Future growth, 34. 24. Over-population, 36.

Appendix A. **Curve Fitting** 38

1. Fitting a straight line, 38. 2. Fitting a parabola of the second order, 39. 3. Fitting the Gompertz curve, 42. 4. Fitting a curve to the population of India, 46.

CHAPTER II. **Agriculture** 50

1. The State in relation to agriculture, 50. 2. Reports on the improvement of Indian agriculture, 50. 3. Agricultural research, 52. 4. Demonstration and propaganda, 52. 5. Agricultural improvement, 52, 6. Improved varieties of crops, 53. 7. Steam tackle and motor tractors, 54. 8. Subdivision and fragmentation of holdings, 54. 9. Owners' and cultivators' holdings in the Punjab, 54. 10. The size and distribution of cultivators' holdings in the Punjab, 56. 11. Remedy against sub-division of holdings, 57. 12. Remedy against fragmentation, 58, 13. The number of cultivators and the average size of the holding, 58. 14. The number of bullocks and the number of cultivators, 60. 15. A vicious circle, 61. 16. Milk and ghi, 63 17. Marketing, 63. 18. Settling rates under cover, 64. 19. Marketing functionaries, 65. 20. Regulated markets, 66. 21. Rural unemployment, 67. 22. Subsidiary occupations, 67. 23. Rural self-sufficiency, 68. 24. Yield of crops, 68. 25. Need for re-organisation of agricultural statistics, 70. 26. Land revenue and agricultural statistics, 70. 27. How yields are estimated, 70. 28. The condition estimate, 71. 29. Irrigation, 73. 30. Tube-well irrigation, 74. 31. Distribution of canal water, 75. 32. The water-rates, 75. 33. Water-logging due to canal-irrigation, 77.

CHAPTER III. **Manufacturing Industries** 80

1. Sinister meaning of growth and progress of Indian industry, 80. 2. Labour in organised industry, 81. 3. Cottage industries, 82. 4. Mineral production, 84 5. Coal and chain-index, 85. 6. Industrial profits, 1928-41, 87. 7. Government policy, 88. 8 Effect of the Great War (1914-18) on Indian industries, 88. 9. Discriminating protection, 90. 10. Iron and steel, 90. 11. The cotton mill industry, 92. 12. The sugar industry, 94. 13 The match industry, 95. 14 Cement, 95. 15. Paper, 97. 16. Jute, 99. 17 Tea, 101.

Appendix B. **Cottage Industries** 103

United Provinces, 103 Bengal 104, Madras, 105; The Punjab, 105.

CHAPTER IV. **Labour Problems** 108

1. Report of the Indian Labour Commission (1928), 108. 2. Government action on the Report, 110. 3. Mines, 112. 4 Payment of wages, 112. 5. Workmen's, compensation, 114. 6. Industrial disputes 115. 7 Shops' legislation, 116. 8. The Industrial Statistics Act, 116. 9. The standard of living, 117. 10. Frequencies of rates of wages, 121 11. Wages on Assam tea plantations, 125. 12 Trade unions, 126.

Appendix C. **Frequency Curves** 130

CHAPTER V. **Educated Unemployment** 133

1. Progress of education, 133. 2. Scope for employment in Government service, 134 3. Cottage industries for the educated unemployed, 135. 4. Agriculture, 135 5. Post-war educational re-construction, 136, 6 Technical, commercial and art education, 136. 7 Monotechnics *versus* polytechnics, 137. 3. The Employment Bureau, 137. 9, Industrialisation the only solution, 138.

CHAPTER VI. **Railways** 140

1. Government and Indian railways, 141. 2. Indianisation, 114. 3. Separation of railway finance from the general finances of the country, 144 4 Indian railways in the depression, 145 5 State *versus* Company management, 147. 6. A Federal Railway Authority, 184. 7. Rail-road competition, 149.

CHAPTER VII. **Foreign Trade and Tariffs** 152

1. Foreign trade in Mughal times, 152. 2 Cotton-weaving, 154 3. Tariff, 157 4. Imperial Preference, 159. 5. The Fiscal Commission, 161. 6 The Ottawa Agreement, 163 7. Gold exports, 166 8. The price of gold, 167. 9. Advantages claimed for gold exports, 170.

CHAPTER VIII. **Indian Prices** 171

1. Prices, 1861-1905, 171. 2. Retail price of wheat, 1861-1940, 173. 3. Prices, 1905-1914, 177. 4 Credit and prices, 179. 5. Rise of prices, 1914-1920, 182. 6. Fall of prices, 1920-29, 182. 7. The Great Depression, 183. 8. Its effect on India's balance of trade, 183 9. Causes of the Great

Depression, 186. 10. Causes of recovery, 187. 11. Farm relief in other countries, 188. 12 Agrarian legislation, Punjab, 190. 13. Other Provinces, 194.

CHAPTER IX. **Currency and Finance** 195

1. The Act of 1835, 195 2. The position of gold in the currency, 196. 3. The fall in the gold value of silver, 199. 4. Foreign trade, 1873-95, 202. 5. Indian currency, 1898-1914, 204. 6 The gold exchange standard, 205. 7. The Chamberlain Commission, 208. 8. Indian Currency, 1914-1920, 219. 9 Exchange and the price of silver, 216. 10 The gold bullion standard, 219. 11. The 18*d*. gold rate, 226 12. How the cultivator gains, 228. 13. Exchange and prices, 229. 14. Exchange and prices, 1861-1891, 232 15. Exchange and prices, 1924-25, 233 16. The Sterling exchange standard, 235.

CHAPTER X **Banking** 237

1. The Imperial Bank of India, 237. 2 The Exchange banks 238. 3. Indigenous bankers, 239 4. Joint-stock banks, 240 5. Are banking facilities adequate ? 242. 6 A Central Bank for India, 243. 7. The Reserve Bank of India, 245. 8 Question of elasticity, 248. 9. Scarcity of bills, 249. 10. The Reserve Bank and exchange, 250. 11. Applicability of the theory of central banking to India, 251. 12. Credit control, 253. 13. Correlation between credit and prices, 253. 14. The Reserve Bank and indigenous bankers, 255.

Appendix D. **Correlation Co-efficient** 257

CHAPTER XI. **The Financing of Industry** 260

1. The Managing Agency system, 260. 2. Industrial banks, 262. 3. Foreign expert advice, 263. 4. State-aid in Japan, 264. 5. The German system, 267. 6. The French system, 269. 7. Summary, 271

CHAPTER XII. **The Financing of Agriculture**. 273

1. Co-operative Credit Act of 1904, 274 2. Act of 1912, 276. 3. The Punjab movement, 276. 4. Progress of the movement, 1910-11 to 1939-40, 278 5. Effect of the Great Depression, 279. 6. The Multi-purpose society, 280. 7. Land mortgage banks, 280. 8. Agricultural non-credit co-operation, 282. 10. Urban co-operative movement, 283. 11. Co-operative trends, 284.

Appendix E. **The Trend of the Co-operative Movement** 288

CHAPTER XII. **Central and Provincial Finance**. ... 291

1. Central revenue and expenditure, 1913-14 to 1920-21, 291. 2. Separation of Provincial from Central finance, 292. 3. The Great Depression, 294. 4. Provincial finance, the Niemeyer Award, 296. 5. Review of 'nation-building' 298. 6. Direct taxes, the Income-tax, 300. 7. The Land revenue, a tax or rent ? 302. 8. Who is the owner ? 305. 9. Land revenue in the Punjab, 308. 10. Calculation of 'net assets' in money, 310 11. Net assets as profits on direct cultivation, 312. 12. The sliding scale, 312 13. The cost factor, 316. 14. Taxable capacity, 317.

CHARTS

1. Showing the rate of mortality from plague per 1,000 in British India from 1920 to 1940 and the fitted curve ... 12
2. Showing the rate of mortality from small-pox per 1,000 in British India from 1920 to 1940 and the fitted curve ... 13
3. Showing the rate of mortality from cholera per 1,000 in British India from 1920 to 1940 and the fitted curve ... 13
4. Showing the rate of infant mortality per 1,000 in British India from 1920 to 1940 and the fitted curve ... 14
5. Showing the birth rate per 1,000 in British India from 1920 to 1940 and the fitted curve 15
6. Showing the death rate per 1,000 in British India from 1920 to 1940 and the fitted curve 15
7. Showing specific fertility rates, or the first differences of the Gompertz curve (Chart 16) 17
8. Showing the age-composition of the population of India in 1931 20

9(*a*). Showing the age-composition of the population of Germany in 1925 22

9(*b*). Showing the age-composition of the population of Germany in 1880 23

10. Showing the number of male survivors, out of 10,000 born living, at different ages in India (1931) and Germany (1871-72 to 1932-34) 27
11. Showing the number of male survivors in India in 1931, out of 100,000 born living, at different ages, and the fitted curve 28
12. Showing the number of male survivors in India in 1881, out of 100,000 born living, at different ages, and the fitted curve 29
13. Showing male survivors out of 100,000 born living, at age 75 in different countries 30
14. Showing the declining trend of the proportion of Hindus per 10,000 of the population and the fitted curve ... 33
15. Showing two curves fitted to the population of India, 1891-1941 34
16. Showing the number of children born per 1,000 females in Ajmer-Merwara (census of 1941) and the Gompertz curve 43
17. Showing the distribution of agricultural holdings in the Punjab and the Lorenz curve 56
18. Showing correlation between the number of cultivators and the average size of the holding 59
19. Showing correlation between the number of cultivators and that of bullocks 62
20. Showing the distribution of expenditure in the case of Bombay cotton mill workers in 1921-22 and 1932-33 ... 119
21. Showing frequencies of rates for moulders employed on daily rates and the fitted normal curve 122
22. Showing a curve fitted to total numbers employed in the Engineering industry of the Bombay Presidency, 1934 ... 123

23. Showing frequencies of rates for carpenters on daily rates (May 1934) employed in Bombay City 124
24. Showing frequencies of rates for men employed in all occupations in the Bombay cotton mill industry in 1921 ... 124
25. Showing net imports or net exports of gold from 1855-56 to 1939-40 168
26. Showing fluctuations in the retail price of wheat in India from 1861 to 1940, a smoothed curve, and two fitted curves 173
27. Showing seasonal fluctuations in the retail price of wheat (Chart 26) with the trend removed 177
28 *a*). Showing the contracting spiral of India's *Exports* from April 1929 to the end of March 1931 184
28(*b*). Showing the contracting spiral of India's *Imports* from April 1929 to the end of March 1931 185
29. Showing exports, imports and balance of trade in merchandise from 1925-26 to 1936-37 185
30. Showing how the exchange value of the rupee and the price of silver moved together between 1873 and 1892 ... 216
31. Showing the independent fluctuations of the exchange value of the rupee and the price of silver between 1898 and 1916 217
32. Showing correlation between the price of silver and the exchange value of the rupee between 1916 and 1921 ... 218
33. Showing the Gompertz curve fitted to members of co-operative societies in British India from 1907-08 to 1939-40 235
34. Showing a curve fitted to members of co-operative societies in British India from 1925-26 to 1939-40 236
35. Illustrating the difference between the 'step' and the 'slab' system of income-taxation 301

ERRATA

P. 36. The first curve is P_2, not P_3.

P. 42, 5th line from bottom. *For* $\log y = \log_x - (\log a)b^x$ *read* $\log y = \log K + (\log a)b^x$.

P. 44, 7th line from top. *For* $\dfrac{-\cdot 162141108}{-\cdot 7749490008}$ *read* $\dfrac{-\cdot 162141108}{+\cdot 7749490008}$

P. 59, last line. *For* log *k* *read* log *x*.

P. 218, 9th line from top. *For* 1931 *read* 1921.

P. 254, 13th line from bottom. *For* −0 13 *read* 0·13.

P. 301, Fig. 35. *For* first 15,000 *read* 5,000.

INDIAN ECONOMIC PROBLEMS: PRE-WAR, WAR AND POST-WAR

CHAPTER I

THE POPULATION OF INDIA

THE CENSUS OF INDIA

1. Method. The 'one night theory.'

The census operations of 1941 differed widely in their circumstances and operations from those of the previous decades. Attention may first be drawn to changes of method.

Our census used to be a simultaneous record, that is, it was taken at one time throughout the country. This does not mean that no enumeration was done except during the night of the census. But the results of previous enumeration were treated as provisional and counting during the census night alone produced the final figures. This 'one night' theory became unworkable on account of communal frenzy in the midst of which the census of 1941 was taken. The Census Commissioner does not believe that "any acceptable record could have come in the contentious areas from the one-night operations of the past."[1] The one night theory had, therefore, to be abandoned. Counting was done during several days, on the basis of ordinary residence, casual visitors being ignored. House lists are always prepared to facilitate counting. The house list was extended so as to give a distribution of the persons in each house by sex and age. In one area (Lahore?) no acceptable record was possible and an estimate had to be made on the basis of distribution of the population by community and vital statistics.

2. Communalism and the Census.

The census in India is not a continuous operation. It is a ten yearly 'convulsion'. The enumeration is carried out for the most part by unpaid enumerators--"India has reached the very advanced position of having this enormous operation carried out by the people as a civic duty."[2] This advanced position has been reached by accident, not design. Now, on account of communal representation, very great importance is attached to communal percentages, and when the enumerators are unpaid, they may interpret their civic duty as duty first to their own community. There is thus a danger of the record being falsified by deliberate swelling of numbers. A good illustration is provided by the language and script questions. They have not been tabulated, the returns being unreliable, and the Census Commissioner has recommended that these questions be dropped from all future censuses until the population of India returns to sanity.

---

[1] *Census of India*, 1941. *Tables* I, P. 10.

[2] *Ibid*, P. 17.

3. New Features.

There are several new features of the census operations of 1941. An elaborate economic survey was carried out in the United Provinces relating to net income of the rural population, distribution of land in rural areas for different purposes, rates of rural wages, the size of agricultural holdings and other matters.

Information has been collected for the first time in the census history of India which would throw some light on the fertility of women in different parts of India. Later we shall examine the returns for Ajmer Merwara. With their help we may calculate gross and net reproduction rates.

We have also community determination for the first time. At previous censuses the sorting was by religion and by caste. The classification by religion is on the basis of "approach to unseen things." And a Hindu or Muslim may not be religious, and yet wish to be included in his community. (The number of such individuals, however, cannot be large.) The distribution by religion also came up against the difficulty of distinguishing between tribal religion and Hinduism ; the tribal returns according to religion were of little value. We have now no all-India caste returns and no returns according to religion, but by community.

In particular cases, where a province or state required a caste record for administrative reasons, the information was supplied, according to broad sub-divisions, on payment.

4. Rationalisation of the Census.

A plea is made for rationalisation of the census by the Census Commissioner. The census is not to be treated as "an omnibus in which all seats are free." The Central Government should bear the cost of tabulation of such material only as is required for central purposes. This includes means of livelihood, community, civil condition, literacy, birth place and mother tongue. Any other information may be collected, but at the cost of the party wanting it.

The following improvements in census methods have been suggested by the Census Commissioner :—

(*a*) Continuity in census operations is desirable. The appointment of a permanent census commissioner is not recommended but provision should be made for "between census consideration" of the results of the previous and preparation for the next census.

(*b*) The one-night round should definitely go, census being taken over a period and related to the resident population. The house list should be kept permanent by correcting it annually ; house numbering should also be made permanent.

(*c*) The synchronised census is to be abandoned. The periods of enumeration in different parts of India need not be the same. "What suits Madras does not suit North India."

(*d*) Natural agencies such as village officers, *patwaris* etc. should be used for the census in rural areas, and the village, in place of the artificial block, made the original census unit. This will be possible when the time of year and the period of enumeration can be chosen so as to suit the convenience of the natural agencies mentioned.

(*e*) In towns the natural agencies for enumeration will be sanitary inspectors, bill collectors etc. The abandonment of the one night theory and the basing of information on normal residence should remove 'the nightmare' aspect from the census in towns.

We are warned that census figures are not to be regarded as correct down to the units, tens, hundreds and even thousands. In the case of all-India and British Indian populations the limit of significance is the lakh, *i.e.*, below the lakh the figures may not be accurate.

5. Area and Distribution.

The area of India is 1·58 million square miles, of which the provinces occupy about 865,000 and States and Agencies 716,000 square miles. The population of India in 1941 was 38,90 lakhs, of which 29,58 lakhs lived in the provinces and 9,31 lakhs in States and Agencies. The population of the major provinces and States is shown in the Table given below :

Table I. 1.

Population in 1941. In thousands.

	Total	Males	Females	Density per sq. mile	Increase of population 1931-41, %	Increase of population 1901-41, %
India	388,998	201,025	187,972	246	15·0	37·0
Provinces	295,809	153,020	142,789	341	15 2	34·1
Madras	49,342	24,557	24,784	301	11·6	36·1
Bombay	20,850	10,817	10,032	272	15·0	36·1
Bengal	60,307	31,747	28,559	779	20·3	43·1
U. P.	55,020	28,860	26,160	518	13·7	16·8
Punjab	28,418	15,383	13,035	287	20·5	42·5
Bihar,	36,340	18,224	18,115	521	12·3	28·6
C. P. & Berar	16,814	8,430	8,383	170	9·7	42·0
Assam	10,204	5,383	4,822	186	18·3	78·2
N.W.-F.P.	3,038	1,651	1,387	213	25·2	48·8
Orissa	8,729	4,218	4,510	271	8·8	22·5
Sind	4,535	2,494	2,041	94	16·7	41·2
Ajmer Merwara	584	307	277	243	15·1	36·9
Baluchistan	502	295	207	9	8 2	31·3
Coorg	169	92	76	106	3 3	– 6·6
Delhi	918	535	383	1,599	44·3	126·2
States and Agencies	93,189	48,006	45,183	130	14·5	47·3
Baroda	2,855	1,473	1,382	345	16·6	45·8
Hyderabad	16,339	8,347	7,992	198	13·2	46·6
Kashmir including feudatories	4,022	2,130	1,892	49	10 3	38·4
Rajputana	13,670	7,170	6,501	103	18·1	34·8
Travancore	6,070	3,045	3,025	792	19·1	105·6

Both the provinces and states vary greatly in area and population. The United Provinces have the largest population, 600 lakhs, followed by Bengal with 550 lakhs. Among the States Hyderabad is the most populous (163 lakhs). The area of Kashmir, including feudatories, is about equal to that of Hyderabad, but it has a population 4 times smaller (40 lakhs).

6. Density.

Similarly there are very great variations in density. Ignoring Delhi where density is exceptionally high on account of the inclusion of a large urban area, among the provinces density is greatest in Bengal, 779 persons per square mile, and lowest in Baluchlstan, only 9. Among the States density is 49 in Kashmir and as high as 792 in Travancore.

It deserves to be noted that the percentage variation in population between 1901-1941 is +47·3 for the States and Agencies and +37·0 for the Provinces. It would seem that conditions for the growth of numbers are not less favourable in States and Agencies than in the provinces.

Density increased from 213 to 246 persons per square mile between 1931 and 1941.

7. Causes of Growth of Density.

There are three main factors determining density in an agricultural country, *viz.*, configuration of the land, rainfall and irrigation. Hills and forests, as in the case of Kashmir, reduce the population in proportion to area. Where there are no hills and forests, and irrigation is not very important, density will be found to vary according to rainfall. The most densely populated regions of India are eastern Bengal and north-eastern United Provinces and Bihar; they receive more rainfall than any other part of India except Assam, where a considerable proportion of the area is covered with hills and forests.

The influence of irrigation as a factor in determining density is shown by the fact that the district of Lyallpur, with an annual rainfall of 12 inches, had a density of 368 per square mile in 1931 ; it must be more now. In 1891, before irrigation started, Lyallpur had only 7 inhabitants to the square mile. Take away the canals and Lyallpur would become a desert again. Referring to the effect of irrigation in increasing density the Census Commissioner says : " The Punjab phenomena show themselves this time in Bikaner where the Sikh has followed the water and produced a 40 per cent increase. Similarly in Bahawalpur, where you have an empty country suddenly presented with the means for filling it, the filling process starts at a high speed. In effect you have an open frontier" [3].

Industrial countries, such as those of Western Europe, have become independent of agricultural conditions. The growth of trade and industry makes it possible for the population to grow rapidly. A growing population requires more food, but

Census of India, **1941, P. 28.**

food may be imported. The best example is provided by the United Kingdom. The population of England and Wales increased rapidly between 1850 and 1910 while the dependence of the country on home-grown food steadily declined. The rate of growth slowed down after 1910, but not because of lack of food.

8. Growing pressure on Agricultural Resources.

In India the main occupation of the people is cultivation and the major portion of the national income is agricultural. Under such conditions a rapid growth of numbers is a cause for alarm rather than satisfaction. Why ?

The area under cultivation cannot keep pace with the growth of numbers indefinitely. In the Punjab, for example, the possibilities of further extending the area under irrigation are extremely limited, and the same is generally true of other parts of India. If, now, population continues to increase at the rate of 15 per cent in a decade, or even at the rate of 1 per cent per annum, a hopeless situation will be created in a very few decades. In fact the rapid growth of numbers during 1921-41 has created a difficult situation. The pressure on agriculture has increased in every part of the country, and this pressure is not relieved by such growth and progress of manufacturing industries as has taken place. On the other hand, machine competition has created unemployment among cottage workers, who have been driven to the land for means of subsistence.

The growing pressure of the population on our agricultural resources was noticed in several provincial reports on the census of 1931.

As far back as 1901 Messrs. Risley and Gait, Census Commissioners of India, mentioned localities, chiefly in parts of Bihar and in the east of the United Provinces, "where the pressure on the soil is already felt," but they hoped that scientific farming would increase the produce of the land so that "room would be found for an even greater population'[4]. They also suggested "that the dense population of certain parts of Bihar was only rendered possible by the readiness of the people to go on reducing their standard of living rather than tempt fortune by emigrating in search of spare land"[5]

The hopes entertained in 1901 have not been realised. Pressure on the soil has been relieved not by scientific farming or emigration but by epidemics, as in 1911-21. The Indian cultivator has a remarkable capacity for reducing his standard of living, but there are limits even to that process.

---

[4] *Census of India*, 1901, Vol. I, Pp. 86-87.

[5] *Ibid.* P. 4.

U. P. According to the Census Report for U. P. (1931) "a considerable body of agriculturists" in the Indo-Gangetic plain, central and East, and Sub-Himalaya East, "cannot make ends meet on the proceeds of their cultivation"[6]; a large proportion of tenants have holdings below the average. The possessions of the ordinary peasant consist in a little land, a pair of bullocks and seed for the next crop, and bare necessities, *i.e.*, "the clothes he stands up in," cooking utensils and an unsaleable house. Bullocks are often sold after ploughing and re-purchased later. "In many cases even seed has to be borrowed for sowing." The pressure on the soil cannot be alleviated by breaking up fresh soil, for "there is very little fresh soil available in the province, especially in those areas where it is most required."[7]

Bihar and Orissa. In Bihar and Orissa the pròportion of the total area under cultivation in 1931 was slightly smaller than in 1921. "Nor can it be asserted that the yield per acre of the soil has been increased to any great extent by new and improved methods of exploitation".[8] Agriculture is there to support the growing numbers. Are there any other resources? "Practically none", says the Census Superintendent (1931). The population "would appear to be exceptionably vulnerable" *i.e.*, an attack of famine followed by epidemics would take a heavy toll of life.

Bombay. Bombay is the centre of the cotton mill industry but even here "numbers have been forced back on the land".[9] A greater burden than ever is being thrown on agriculture as a source of livelihood." The decade 1921-31 witnessed "no great new sources of wealth".

Madras: "Over much of the rural tracts of the Presidency," wrote the Census Superintendent for Madras in 1931, "the land is supporting as many people as under the present conditions it can without an alteration in standards"[10]. The saturation point has been reached in certain parts. In other

[6] *Census of India*, 1901, Vol. I, P. 46.
[7] *Ibid.*, P. 48.
[8] *Census of India*, 1931, Vol. I, P. 72.
[9] *Cesnus Report*, 1931, P. 24.
[10] *Census Report*, 1931, P. 46.

areas the population level of subsistence is maintained only by continuing emigration.

Punjab. In the Punjab, as compared with the 14 per cent increase in population in 1921-31, the number of cultivators (workers) increased by 25·7 per cent. It is probable that the population dependent on agriculture increased by even a larger percentage. Referring to the "very big increase in the already numerous category of cultivators" the Census Superintendent says: "The other resources of the province are obviously not keeping pace with the rate of increase in the population."[11]

N.-W. F. P. As in other parts of India, agriculture is the main existing source of wealth in the N.-W. F. P. and it "has almost reached the limit of its expansion."

Bengal. There is room for expansion in Assam, and possibly in Central Provinces and Berar, but certainly not in Bengal. The Census Superintendent for Bengal (1931) thought that if agriculture were improved, Bengal could support at the 1931 standard of living a population very nearly twice as large as that recorded in 1931 (50 millions). Judging from the terrible experience of this province in 1943, the expected improvement in agriculture has not yet come about.

The 1931 tale is gloomy. For the 1941 story we must wait till the provincial reports become available. But considering the rate of increase during 1931-41, 15%, as compared with the 10·6 per cent increase in 1921-31, the pressure on agricultural resources to-day must be a great deal heavier than before.

9. Emigration.

External emigration, as an outlet for surplus population, has ceased to be of any account. The number of those who emigrated to foreign countries during the decade 1921-31 is estimated at about 1 million. The Indian Agricultural Commission of 1928 stated that the annual amount of emigration to Ceylon and Malaya satisfied their economic demand and could not be adequately increased. Ceylon was "slowly reaching the saturation point in absorbing Indian labour on the estates."[12] The emigrants to Ceylon were drawn chiefly from Madras. Since then there has been repatriation of Indians from Ceylon. The number of emigrants to all countries between 1930-31 and 1939-40 amounted to 362,000. The number of emigrants who returned to India during this period was 860,000, For feeding her growing millions India must depend mainly on her own resources. Little help is to be expected from other countries. The doors of British Dominions like Australia, New Zealand and Canada, and of the United States of America, are tightly shut against us.

---

[11] *Census Report*, 1931, Pp. 221-222.

[12] *Report of the Agricultural Commission*, 1928, Pp. 584-585.

Emigration from India is controlled by the Emigration Act of 1922. Migration of labour between province and province is unrestricted by Government with the exception that certain provinces can regulate or prohibit the migration of labourers to the tea-gardens in Assam. The Agricultural Commission recommended the abolition of all restrictions on the movement of labour throughout India. The Commission found that migration within India was not taking place to the extent which might have been expected, in spite of the fact that pressure on the soil was "extreme" in North Bihar, in the deltaic areas of Bengal and Madras, and in certain parts of the United Provinces. The factors which limit the internal movement of labour are three: (a) attachment to land, however small be the holding of the cultivator, (b) indebtedness, which makes it difficult for the cultivator to leave the village permanently, and (c) "the important factor of ill-health."

Among the provinces which lose by migration, the United Provinces, Bihar and Orissa are most important. There is room for immigrants in Assam, but this province is rapidly filling up. Burma used to attract immigrants from Madras.

10.✓ Movement of the Population.

The heavy rate of increase of population between 1921 and 1941 has been mentioned above. We may now consider the movement of the population since the beginning of Indian census history. The real increase of numbers, including Burma, between 1872 and 1931 is shown below :—

Table I. 2.

Real increase of numbers

Period	India (including Burma) Millions.	Increase per cent.
1872-81	3·0	1·1
1881-91	24·3	9·1
1891-1900	4·1	1·4
1901-11	18·7	6·3
1911-21	3·7	1·2
1921-31	33·9	10·6

These figures show the increase of numbers, allowing for two factors, (1) the additions of area and population included at each census, and (*b*) progressive increase in the accuracy of enumeration from census to census. The population recorded at each census, making no allowance for these two factors, is misleading. For example, the recorded population in 1872 was 206·2 millions and in 1881, 253·9 millions—an apparent increase of 47·7 millions. The real increase was 3 millions only —the famine of 1876-78 cut short the growth of numbers. Between 1872 and 1931 the population was increasing irregularly—a decade of rapid growth being followed by a decade in which the population was practically stationary. The decade 1881-91 was healthy, and the rate of increase was 9·1 per cent. In the following decade plague and famine checked the growth of numbers. The decade 1901-11 was free from any serious, wide-spread famine ; it was a period of 'moderate agricultural prosperity'. The real increase of population was 6·3 per cent in this decade. It would have been greater but for disease. Malarial fever took a heavy toll of life in the irrigated tracts of Eastern and Central Punjab and the Ganges-Jumna Doab in the United Provinces where, in 1908 alone, the reported mortality from 'fevers' was nearly two millions. The Punjab, United Provinces and Bombay suffered severely from plague ; total plague mortality was estimated to be 6·5 millions, of which over one-third occurred in the Punjab.

The outstanding feature of the decade 1911-1921 was the influenza epidemic. The Great War falls in this period, but its effect on the growth of numbers was negligible. Economic conditions were favourable till 1917. The monsoon of 1918 was feeble and that of 1919 was not much better. The out-turn of the chief food crops declined heavily and prices rose. Influenza came at a time of wide-spread crop failures and "wiped out in a few months practically the whole natural increase in the population for the previous seven years." The actuarial report on the census of India put influenza mortality at 22 millions, or 7 per cent of the population.

The epidemic affected rural districts more severely than urban districts. In the Punjab the mortality in urban areas was 36 per *mille* as against 51 per *mille* in rural areas. Mortality was under 5% among Europeans, about 6% among Indians of the higher classes who were able to obtain medical attendance, and over 50 per cent among the people in rural districts. The heavy mortality in rural areas was due to lack of medical assistance and inadequate provision of diet, clothing, etc., in illness.

The Punjab suffered severely from influenza but it still suffered less than the United Provinces and the Central Provinces. At the end of the decade, the population of the United Provinces was found to have decreased by 3·1 per cent and of the Central Provinces by 0·3 per cent. as compared with 1911.

11. New Cycle of Growth.

The rapid growth of numbers during 1921-31 was not unexpected in view of the small increase during 1911-21. But a decade of record increase of numbers was followed by another in which a new record was established. It is obvious that a new cycle of growth commenced in 1921.

The following statement shows the growth of numbers for India, including States and Agencies, but excluding Burma, during the past 50 years : —

Table I. 3.

	Persons (Lakhs.)	Variation (Lakhs).
1891	27,94	—
1901	28,39	+ 45
1911	30,31	+192
1921	30,57	+ 26
1931	33,81	+324
1941	38,90	+509

The addition to the population in 1931-41 amounted to about 51 millions, which is greater than the estimated population of the United Kingdom in 1939 (47·7 millions). What has made this enormous increase in numbers possible ?

* "From the middle of October to the November," says the Census Superintendent for the Punjab, "the state of the Province beggared description. Hospitals were choked, dead and dying lay by the sides of the roads, burial grounds and the burning ghats were strained beyond their capacity and corpses lay awaiting burial and cremation. Terror and confusion reigned supreme, the postal and telegraph services were disorganised, and a harrassed and depleted medical service struggled valiantly, but ineffectually to cope with the disease. During this period large numbers of the educated classes earned the gratitude of the sufferers by devoted self-sactrifice and social service, while medical students throughout the province rendered every assistance within their power." *Punjab Census Report*, 1921, p. 60.

12. Birth and Death Rates. Mortality from Cholera, Small-pox and Plague.

The explanation lies in a rising birth rate, a falling death rate, a marked fall in infantile death rate and the downward trend of mortality from cholera, plague and small-pox. These phenomena are best studied with the help of the accompanying charts.

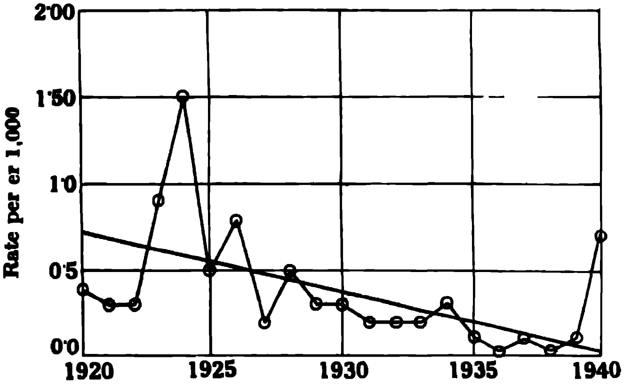


Fig. 1.
Showing the rate of mortality from plague per 1,000 in British India from 1920 to 1940. For data see Table A. 3.
The equation to the fitted straight line is :
$y = \cdot381 - \cdot0339\,x$
($x = 0$ for 1930)

Let us begin with plague mortality. The rate (per 1000 of the population) shows considerable variations from year to year and in 1940 mortality was about twice as high as in 1920. But the trend of mortality was downwards. This is shown by the straight line passing through the observed values, represented by circles. The straight line has been drawn by the method of least squares. The explanation of this method of curve fitting lies beyond the scope of the present work, but the application of the method is easy (see Appendix A). The method is of great value for indicating and measuring trends ; it has been used for this purpose in the census Tables for 1941.

The rate of mortality from small-pox (Fig. 2) also shows a declining straight line trend, but the fall is not very marked. The declining trend in the case of death rate from cholera (Fig. 3) is best shown by a parabola of the second order ; the rate tended to rise, though not regularly, after falling to 0·3

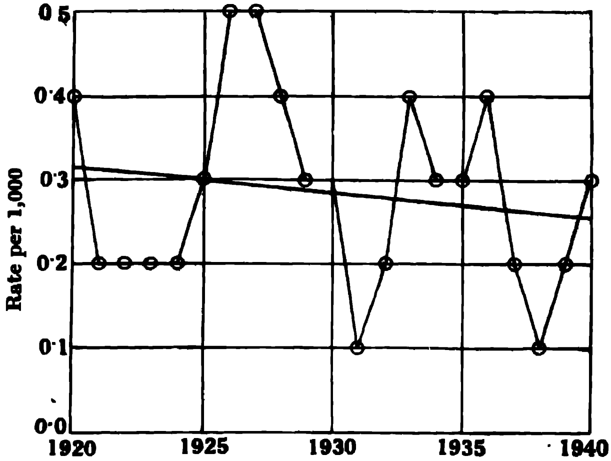


Fig. 2.

Showing the rate of mortality from small-pox per 1,000 in British India from 1920 to 1940. For data see Table A. 8.
The equation to the fitted straight line is :

$$y = 0{\cdot}286 - 0{\cdot}003\ x$$
$$(x = 0 \text{ for } 1930)$$

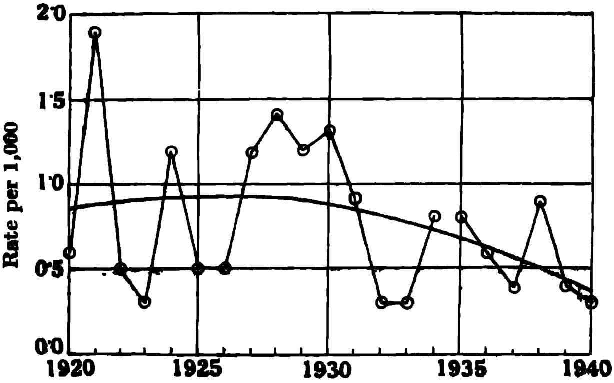


Fig. 3.

Showing mortality from cholera, per thousand, in British India from 1920 to 1940. For data, see Table A. 2.
The equation to the fitted curve is :

$$y = 0{\cdot}8694 - 0{\cdot}02429\ x - 0{\cdot}00254\ x^2$$
$$(x = 0 \text{ for } 1930)$$

in 1923. It was 0·3 again in 1940. The theoretical values rise from 0·86 in 1920 to 0·93 in 1925 and 1926 and drop to 0·37 in 1941.

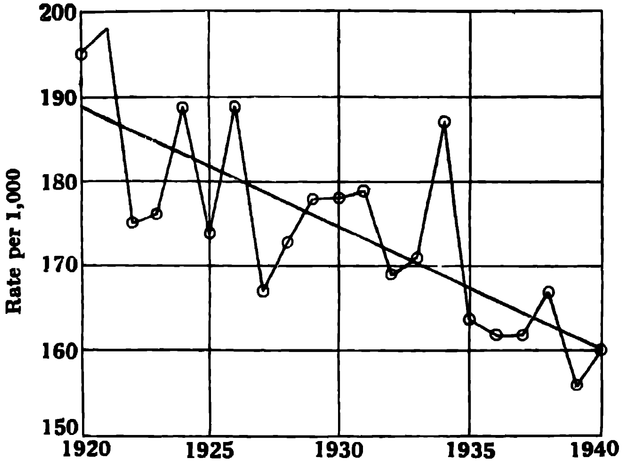


Fig. 4.

Showing the rate of infant mortality per 1,000 in British India from 1920 to 1940. (Table A. 4)

The equation to the fitted straight line is :

$$y = 174{\cdot}71 - 1{\cdot}44\,x$$

(x=0 for 1930)

There was during the period a very marked fall in the infantile death rate (Fig. 4). From 195 in 1920 infant mortality came down to 160 per 1,000 in 1940.

The rise in the birth-rate (Fig. 5) is not less noticeable than the fall in the death rate (Fig. 6). But even if the birth rate had been stationary, the fall in the death rate, and the rate of infant mortality, and success in fighting disease which has reduced the mortality from cholera, plague and small-pox, would have caused a rapid growth of numbers.

Of special significance is the fall in infant mortality. It has been calculated that if infant mortality continues to be 160 per *mille* (the figure for 1940), the addition to the population from this cause would be 6 5 millions in 1951 and 11·1 millions in 1961. If the trend continues to be downwards, as during 1920-40, the corresponding additions will be 7·0 millions in 1951 and 13·4 millions in 1961. Such, in the words

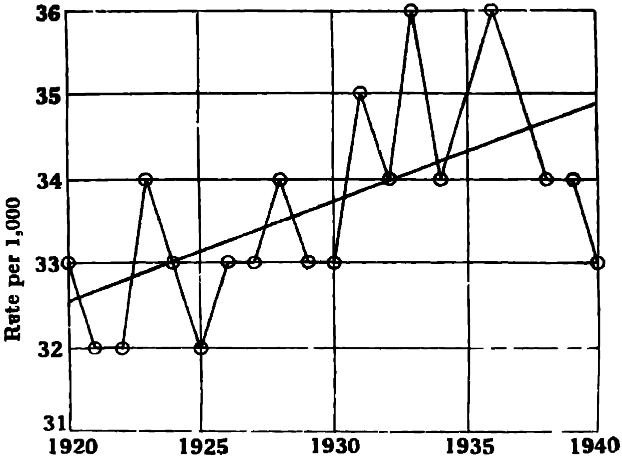


Fig. 5.

Showing the birth rate per, 1,000 in British India from 1920 to 1940 (Table A. 4)

The equation to the fitted straight line is :

$y = 33{\cdot}714 + 0{\cdot}116x$

($x = 0$ for 1930)

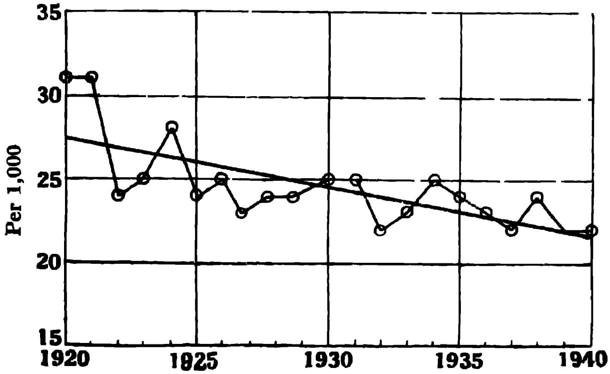


Fig. 6.

Showing death rate per 1,000 in British India from 1920 to 1940 For data, see Table A. 4.

The equation to the fitted straight line is :

$y = 24\ 57 - 0\ 20x$

($x = 0$ for 1930)

of the Census Commissioner, is "the nature of the portent exposed for the attention of governments and citizens alike."[18]

13.√ Gross and Net Reproduction Rates. Fertility.

Thanks to Mr. Yeats, Census Commissioner for India, 1941, we are able, for the first time, to form some idea of our gross and net reproduction rates.

Table I. 4.

Age Group	Total number of children born per 1,000 women passing through each group.	Number of female children born per 1,000 women passing through each group.	Number of survivors of each 1,000 female children born.	Number of surviving women by whom present women replace themselves.
1	2	3	4	5
15—20	691·2	332	548·94	182
21—25	1670·2	803	499·37	401
26—30	1556·5	748	447·95	335
31—35	902·2	434	394·38	171
36—40	430·5	207	339·77	70
41—45	188·8	91	285·32	26
46 - 50	79·9	38	234·01	9
	5519·3	2653		1194

Gross reproduction rate : 2·65.
Net reproduction rate : 1·19.

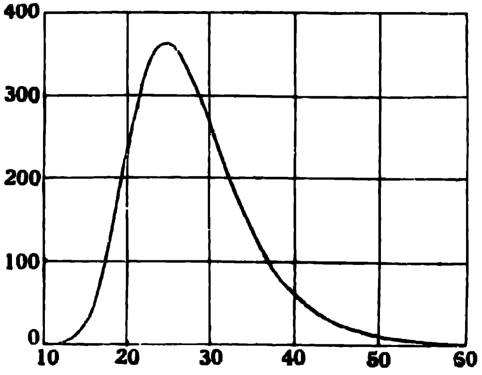
The child-bearing period is from 15 years to 50 years. Col. 1 of the Table shows its division into six groups. Figures in col. 2 are called specific fertility rates. The specific fertility rate is different for each age. Here, for reasons of convenience, we have considered specific fertility by age-groups.

Specific fertility rates are derived from actual data showing the total number of children born to females of different ages. Total children born per 1,000 females in the selected villages of Ajmer-Merwara are given in Table 3 of Appendix A. The data are irregular, and require smoothing to remove irregularities. The method used in all-India Census Tables, 1941, is explained in the Appendix. Having obtained smoothed figures of specific fertility, we work with these only, ignoring the actual data.

Fig. 7 shows specific fertility rates for each age from 15 to 50. We obtain a bell-shaped curve, with a longer stretch of tail to the right than to the left. The curve extends indefinitely on both sides.

---

[18] *Tables*, 1941 Vol. 1, p. 84.



Age in Years

Fig. 7.

Showing specific fertility rates, or first differences of the Gompertz curve, shown in Fig. 16. For data, see Table A. 5.

The number of children born (calculated) per 1,000 females is 14·13 for age 14, and 37·25 for age 15. The specific fertility rate for age 15 is thus 37·25 – 14·13 = 23·12, and so on.

The Gompertz curve describes a series in which the growth increments of the logarithms of *y* decline by a constant percentage. These growth increments are first differences of trend values. When plotted on graph paper they produce a curve with a longer stretch of tail to the right than to the left of the maximum - or a bell-shaped curve with positive skewness.

Gross Reproduction Rate. Between the ages 15 and 50, the total number of children born per 1,000 females during the child-bearing period is 5519·3.

Children are born only to females. In calculating the gross and net reproduction rates male children are ignored.

How many of the total children born in our example are females ?

The ratio of male to female births in India is 108 male to 100 female births. The excess of male over females at birth is a universal phenomenon. The ratio of female births to total

Unless fertility increases, or mortality declines, the population in countries with a net reproduction rate of less than 1·0 must eventually decrease.

Fifty years ago, Mr. Kuczynski* (to whom we are indebted for this beautifully simple method of calculation) tells us, the gross reproduction rate for western and northern Europe as a whole was 2·1. By 1911-14 it had fallen to 1·6 and in 1933 it was 0·9. The meaning is, as the reader has already learnt, that 90 girls were born to 100 women passing through the child bearing age. Even if every newly born girl reached the age of 50 (which is impossible) the population is not replacing itself, and, unless conditions improve, the people as Mr. Kuczynski says, "are doomed to die out".

15. Age-Composition of the Population.

At any time there may be an excess of births over deaths in a country and yet the population must eventually decline if the proportion of children to the total population is falling.

As age statistics for 1941 are not yet available, we may consider the 1931 returns. It is extremely unlikely that any change of importance has taken place.

Age-distribution takes a pyramidal form (see Fig. 8).

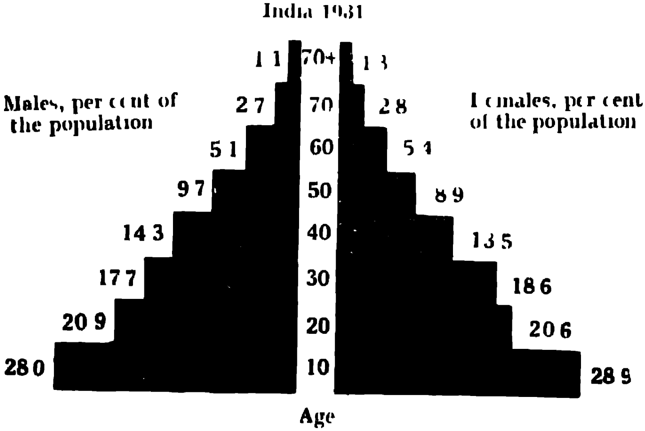


Fig 8
Showing the age-composition of the population of India in 1931

---

* *Population Movements* Pp. 41-43.

Table I·7

Age Distribution, India, 1931 Census.*

Age groups	Males		Females	
	Millions	Per cent.	Millions	Per cent.
Total	180·2	100·0	169·6	100·0
1—4	26·5	14·7	27·0	15·9
5—9	23·8	13·2	21·7	12·8
10—14	21·6	12·0	19·1	11·2
15—19	16·0	8·9	15·9	9·4
20—24	16·3	9·1	16·7	9·8
25—29	15·5	8·6	14·7	8·7
30—34	14·2	7·9	12·8	7·6
35—39	11·5	6·4	10·1	5·9
40—44	9·9	5·5	8·6	5·0
45—49	7·6	4·2	6·6	3·9
50—54	6·0	3·3	5·4	3·2
55—59	4·2	2·3	3·9	2·3
60—64	3·3	1·8	3·3	1·9
65+	3·8	2·1	3·8	2·3

As compared with most European countries our age-pyramid has a broader base and a narrower top, showing a higher proportion of children (below 15) and a lower proportion of old men (65 and over) in the total population.

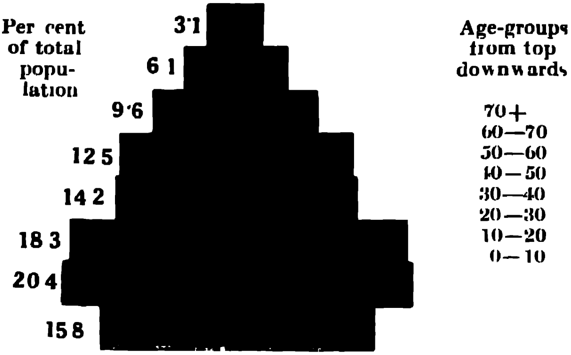
In India, changes in the age composition of the population are largely due to calamities like famines or epidemics. For example, in 1881 the proportion of children was below and of adults above the normal on account of the famine of 1876-78. The influenza epidemic of 1918-19 claimed a higher proportion of victims from the ranks of children and adults than old men, with the result that in 1921 the proportion of old men to the total population was above the normal and of children and adults below the normal.

---

* *Statistical Year Book of the League of Nations, 1940-41*, p. 25.

In countries of Western Europe the proportion of children to the total population has fallen and of old persons risen. The fall in the birth rate accounts for the former, and very great improvement in the conditions of life (success in fighting diseases and rise in the standard of living) for the latter phenomenon.

As an example, the proportion of females below 15 years of age to the total number of females in Germany in 1925 was 24·7 per cent., and in 1910, 33·3 per cent.* The rise in the proportion of females over 50 is of no consequence from the point of view of growth of numbers



Germany 1925

Fig 9 (*a*)

Showing the age-composition of the total population of Germany (males as well as females) in 1925 Note the shrinking of the first age block (0—10) at the bottom

If the first age block shrinks, that is, if there are fewer female children aged 0-5, there will eventually be fewer mothers of child-bearing ages, and the population must eventually decline, in spite of excess of births over deaths.

Assume that the pass percentage in the University Matriculation examination remains unchanged, and also that there is no change in the proportion of successful students who, for one reason or another, discontinue their studies after passing the Matriculation. If the total number of students sitting for this examination fell, the pass percentage

---

* ***Statistisches Yohrbuch, 1934,*** **p. 12.**

Table I 8.
Age-Composition

	Germany			India, 1931‡	
	Total Population, per cent.			Males	Females
	1880*	1910†	1925†		
0—10	25·3	23·4	15·8	28·0	28·9
10—20	19·6	20·3	20·4	20·9	20·6
20—30	15·9	16·4	18·3	17·7	18·6
30—40	13·0	13·7	14·2	14·3	13·5
40—50	10·4	10·7	12·5	9·7	8·9
50—60	8·0	7·6	9·6	5·6	5·4
60—70	5·3	5·1	6·1	2·7	2·8
70 and over	2·5	2·8	3·1	1·1	1·3
	100·0	100·0	100·0	100·0	100·0

* *HWB* Vol I, p 262

† *Stat Jahrbuch für 1931*, p 12.

‡ *Census Report, 1931* Vol I, p 98

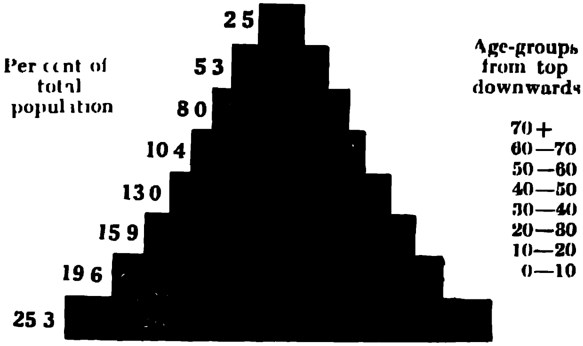


Fig 9 (*b*)

Showing the age composition of the total population of Germany males as well as females)

This German age-pyramid of 1880 is regular like our own at the present time and the proportion of students who discontinue their studies remaining unchanged, the number of college students must fall.

With our birth rate not lower than before (the rising trend may be ignored) there is little danger of a declining trend of population setting in on account of the shrinking of the first age-block.

16. Scarcity of Females.

The census figures for 1941 (as those of the preceding censuses) reveal a deficiency of females in the total population. This deficiency is greatest in the Punjab. Of a total population of about 389 millions in 1941, 201 million were males and 188 million females. Per 1,000 males there were thus 935 females. For the Punjab this proportion is 847. Taking all ages together, there were per 1,000 males 954 females in India in 1911, 946 in 1921, and 940 in 1931. The proportion of females per 1,000 males in the Punjab has varied as under :

	Proportion of females per 1,000 males in the Punjab.
1881	844
1891	850
1901	854
1911	817
1921	828
1931	831

The figure for 1941 (847) would suggest some improvement. There is a deficiency of females at birth also in Europe, but there the death rate among females is lower than among males and, consequently, the proportion of females to males in the higher age-groups increases, and in the total population there is an excess of females over males. The deficiency of females in the total population would seem to be a peculiarly Indian phenomenon.

What is the explanation ?

The deficiency of females at birth is not a satisfactory explanation, for, as we have seen, it is universal. A higher death rate among boys, who are constitutionally more delicate than girls in the earlier years, equalizes the proportion of the two sexes in Europe by the time adolescence is reached, and at the age of 4 or 5 in India. After that, in European countries, mortality among males remains relatively high on account of their harder life. It is otherwise in India, and particularly in the Punjab.

The Census Superintendent for the Punjab, 1931, seemed to attribute the preponderance of males in the Punjab to its peculiar requirements, the Punjab being 'the gate-way and sword-hand of India.'[15] A more reasonable explanation is that conditions for life are harder for women than for men in the Punjab as also in the other provinces where a deficiency of females exists. Mr. Yeats says: "Nothing is ever single in the world of human causation and this matter of female defect is not separable from a wide range of considerations which begin in public health and end in social custom, covering, for example, such features as maternal mortality, early marriage and prohibition of widow remarriage."[16] The *purdah* may also be mentioned in this connection.

17. Marriage.

The Census Commissioner for 1931 estimated the ratio of females aged 0-15 who were married at 196 per 1,000 (144 per 1,000 in 1921). The Sarda Act came into force a year before the census of 1931, and hence the rush to marry off children.

In Europe men marry generally at the ages of 27-28 and women at the ages of 24-25.

The proportion of married women per 1,000 women in 1931 and 1921 is shown below:

Ages	1931	1921
15-20	818	771
20-25	886	877
25-30	869	863
30-35	824	797

The figures for 1931 are higher, and in view of the more rapid increase of population in 1931-41, those for 1941 for all ages of the reproduction period (15 to 50), may be higher still.

Marriage is more general in India than in European countries, but we have a higher proportion of widows.

The privilege which Hindu widowers enjoy of re-marrying, denied to widows, explains the high proportion of Hindu widows, aged 15-40, 124 per 1,000, as compared with the figure for widowers—43 (1931 census). The corresponding figures for Muslims are, widows 91, and widowers 36

---

[15] *Census Report*, Punjab, 1931, P. 150.
[16] *Census Table*, 1941, Vol. I, P. 51.

18. Expectation of Life.

The expectation of life (mean after life time) for males and females in India at certain ages (1931) is shown below —

Age	Males , years	Females , years
0	26 91	26 56
10	36·38	33·61
20	29 57	27·08
30	23·60	22·30
40	18 60	18 23
50	14·31	14 65
60	10 25	10 81
70	6·35	6 74

The expectation of life was higher in 1931 than in 1911 and it must have risen in 1941—on account of the improvement in health conditions which made a rapid growth of numbers possible. It remains to be seen whether the progress will continue.

The increase in the expectation of life at birth in Germany is shown by the following figures —

Age	Males , years	Females years
1871 80	35 58	38·45
1881-91	37 17	40·25
1891 1900	40 56	43 97
1901 10	44 82	48 33
1910 11	47 11	50 68
1924-27	55 97	58 82

The expectation of life at birth in Germany in 1924 27 was more than double of that in India in 1931 The same is true of England and Wales

19. Curve of Survivors

Table 15 gives the number of female survivors at certain ages (1931) The number of male survivors is not materially different The curve is a straight line with a very slight bulge, as may be seen from Fig 11

As compared with 1881 there is some improvement, for the 1881 figures show no bulge at all.

We have noted the increase in the expectation of life at birth in Germany between 1871 72 and 1924 27. The figures

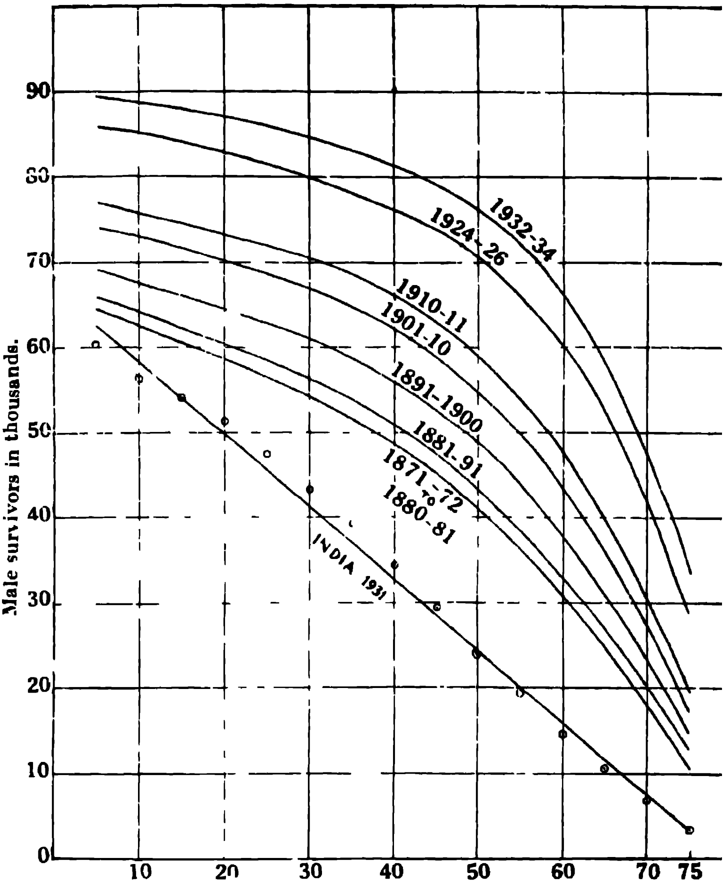
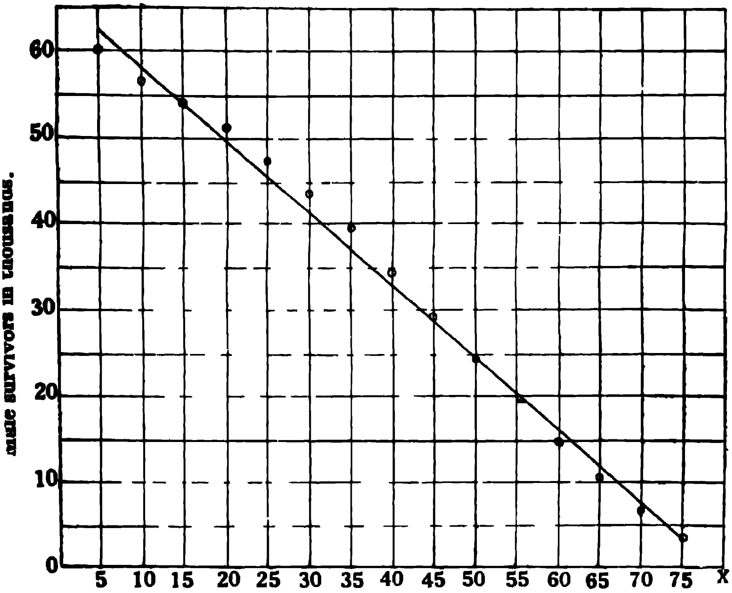


Fig. 10.

Showing the number of male survivors, out of 100,000 born living, at different ages in India (1931), and Germany. Even for the period 1871-72 to 1880-81, the German curve is not a straight line. The bulge increases progressively, showing improvement in the conditions of life. For German figures for 1924-26 and 1932-34 see *Statistical Year Book* of the League of Nations, 1938-39, p. 49, and for the earlier years, J. Conrad, *Statistick*, Part 1, p. 216.



India 1931 Age in years.

Fig 11

Showing the number of male survivors in India out of 100,000 born living at different ages The equation to the fitted straight line is

$$y = 33\cdot17 - 4\cdot24x$$

($x = 0$ for age 40)

provide a strong contrast to India The contrast is not less striking in the case of survivors, as may be seen from Fig. 13

Indians were longer lived in the past and the natural expectation of life in ancient India was 100 years Our curve of survivors must have then possessed a bulge like that of the leading European countries at the present time.

20. Town and Country

Taking the population classified according to locality as 386 millions, 323·9 millions, or 83·9 per cent, lived in localities with a population of less than 5000 (villages) and 62·1 millions, or 16·1 per cent, in towns with a population of 5,000

India Male survivors out of 100 000 born living Figures in thousands.

Age	1881	1931
5	56·7	60·2
10	52·1	56·5
15	49·0	54·1
20	45·0	51·2
25	40·8	47·8
30	36·8	43·9
35	32·8	39·5
40	28·9	34·6
45	25·1	29·4
50	21·3	24·3
55	17·3	19·5
60	13·3	14·9
65	9·3	10·8
70	5·5	7·0
75	2·6	3·8

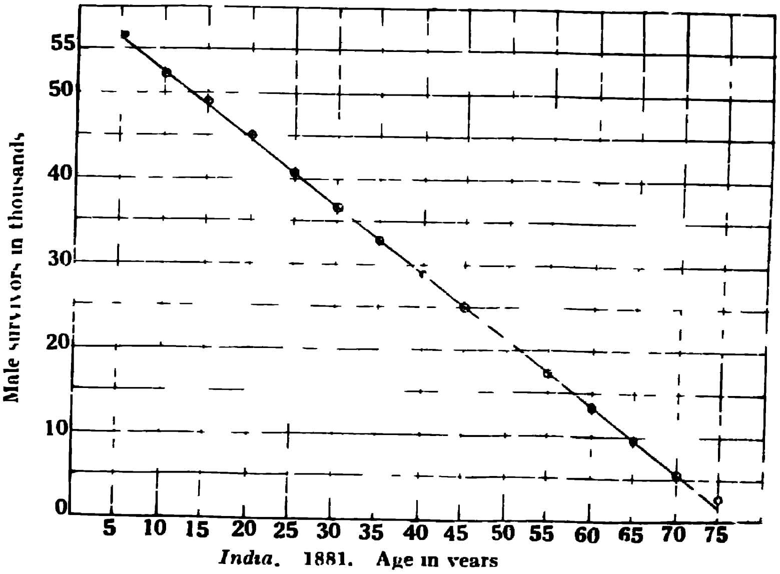
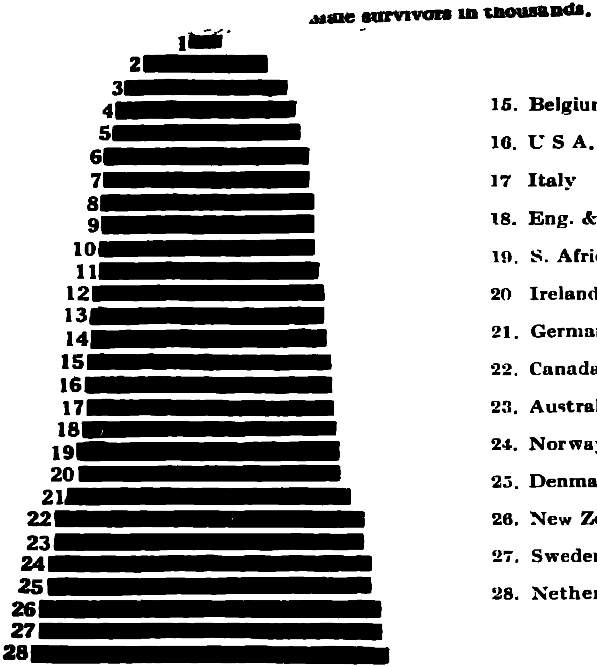


Fig. 12

Showing the number of male survivors in India, out of 100 000 born living, at different ages. The equation to the fitted straight line is ·

$$y = 29{\cdot}1 - 3{\cdot}9x$$

($x = 0$ for age 40)



	Survivors in thousands		Survivors in thousands
1. India ..	3·5	15. Belgium ...	28·4
2. Japan .	14·8	16. U S A. (Whites)	29 1
3. U S. S. R. ...	18 7	17 Italy ...	29·3
4. Poland	20 8	18. Eng. & Wales ...	29·7
5. Hungary	21·5	19. S. Africa .	30·6
6. Finland	2[illegible]·6	20 Ireland .	30·6
7. France .	23·8	21. Germany .	33·3
8. Bulgaria	24 8	22. Canada ..	36·4
9. Czecho-Slovakia	25 1	23. Australia ...	36·6
10. Greece	25 2	24. Norway ...	38 1
11. Austria	25 9	25. Denmark ...	38·1
12. Scotland .	27 0	26. New Zealand .	40 1
13. Latvia .	27·3	27. Sweden ...	40·3
14. Switzerland .	27 6	28. Netherlands .	41·7

Fig 13.
Showing male survivors at age 75 in different countries, out of 100,000 born living.

and over. The following statement gives details of the town population :—

Population	Number of towns	Population living in them (millions.)
5000-10,000	3017	20·5
10,000-20,000	733	10·0
20,000-50,000	321	9·6
50,000 100,000	95	6·1
100,000 and more	57	15·9
Total	4,223	62·1

The rate of increase of the urban population is high—the proportion of the urban population to the total in 1931 was 11 per cent. The Census Commissioner (1941) says "I think it is time that it was realized that India is in for urbanization on a big scale and that it will affect pronouncedly the really large towns rather than the smaller ones"[17]. The number of cities with a population of 100,000 or more increased from 35 in 1931 to 58 in 1941, and the city population increased during this period from 9·1 to 16·5 millions. This means a rise of 81 per cent, which may be contrasted with the 15 per cent increase in population over the whole country.

The causes of accelerated urbanisation are the progress of manufacturing industries, improved accommodation in towns for the middle classes, improved means of transportation in the shape of the tram and the bus, and attractions such as restaurants and cinema houses. The progress of education is also a factor, and anti money-lender legislation in certain provinces had the effect of driving some money-lenders from villages to the towns

The towns are growing irregularly and with their dirt and squalor are not a pleasant sight. There is urgent need for town improvement everywhere. "To approach Lahore in recent years from the air was to have the picture of some spreading sore, while Calcutta gave all the appearance of an octopus except that it had many more than eight tentacles".[18]

A plan for the development of India's water-power resources would prevent over-crowding in towns by decentralizing industry.

---

[17] *Census of India*, 1941. P. 26.

[18] Ibid. P. 26.

21. Literacy.

India enjoyed the unenviable distinction of leading the world in illiteracy in 1931. The present position is not exactly known. The increase in literacy in 1941 over 1931 was 70 per cent for the whole population, of which the male increase was 60 and the female 150. In 1931, 17·4 per cent of males and 3·1 per cent of females were literate. The Punjab has attained a literacy of 13 per cent with 140 per cent increase in 1931-41. The figure for U.P. is 8 per cent. Bombay leads the provinces with a literacy of 30 per cent for males and 9 per cent for females, Bengal following with 16 per cent and 7 per cent literacy for males and females respectively.

Travancore and Cochin have reason to be proud of their 56 per cent literacy for males and 34 per cent for females.

The Census Commissioner mentions radio broadcasts, political developments and anti-illiteracy drives among the factors promoting the growth of literacy. When people listen to public broadcasts, some of them, at any rate, will not remain content just to be told. He lays stress on the point "that a democratic system based on heads is incompatible with a predominant illiteracy."[19] Our democracy is broad-based not only on illiteracy but caste and community.

22. Community.

The number per 10,000 of the population of the various communities is shown below. These are all-India figures.

Table I. 11

	1881	1891	1901	1911	1921	1931	1941
Hindus	7,432	7 231	7,034	6 931	6,841	6,824	6,593
Muslims	1,974	1 996	2,122	2,126	2,171	2 216	2,381
Christians	73	79	99	124	150	170	168
Jains	48	49	45	40	57	36	37
Sikhs	73	67	75	96	103	124	147
Tribes	259	323	292	328	309	236	658
Others			333	853	386	385	20

Changes in classification are responsible for the very large variations under 'Tribes' and 'Others'. Over the whole period the proportion of Sikhs has doubled ; the increase in the proportion of Muslims is comparatively less marked. What is most noticeable is the continued fall in the proportion of Hindus. When the figures are plotted on graph paper a declining straight-line trend becomes immediately apparent.

---

[19] *Census of India*, P. 82.

If the trend persists, the proportion of Hindus in the coming decades may be expected to fall as shown below :

Proportion of Hindus per 10,000 of the population.

1951	6480·27
1961	6354·41
1971	6228·55
1981	6102·69
1991	5976·83
2001	5850·97

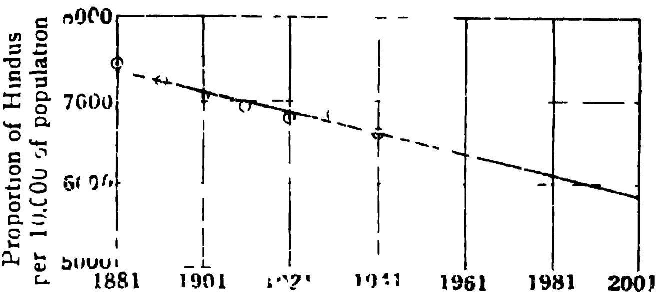


Fig 14.

Showing the declining trend of the proportion of Hindus per 10,000 of the population The equation to the fitted straight line is : $y = 6983{\cdot}7 - 125{\cdot}9x$ ($x = 0$ for 1911) See Table A I.

It is to be noted that it is the proportional strength of Hindus that has declined , the actual number of Hindus is not decreasing. The Hindus are a major community and the whole population cannot increase by a large percentage when a major community is shrinking. The Hindus increased by 10·4 per cent in 1921-31 (total population increased by 10·6 per cent) and their rate of increase during 1931-41 cannot be much less than 15 %. Actual figures are not yet available.

The proportional strength of a community will decline if sister communities have a more rapid rate of growth.

In regard to Sikhs it was noted at the census of 1931 that their 33·9 increase in 1921-31 was not an entirely natural increase of population. The Sikhs had gained converts from the Mazhabi section and also from Hindu Jats and Aroras, even in the eastern parts of the Punjab.

In most provinces the rate of increase of Muslims was found at the census of 1931 to be decidedly higher than that of Hindus, and particularly so in the Punjab. The Census Commissioner wrote : "Probably owing to the practice of polygamy, of widow remarriage and on the whole of later consummation of marriage than is the prevailing practice among most Hindus, the Muslims are at present increasing at a greater rate."[20]

Fertility rates for the various communities, if they were available, would provide very interesting material for analysis.

23. Future Growth

On account of the war Mr. Yeats had to combine census work with other duties. He had contemplated writing an essay with a map showing India's forests, irrigation and water powers as backgrounds He also intended to give us a mathematical equation of population growth All this has gone.

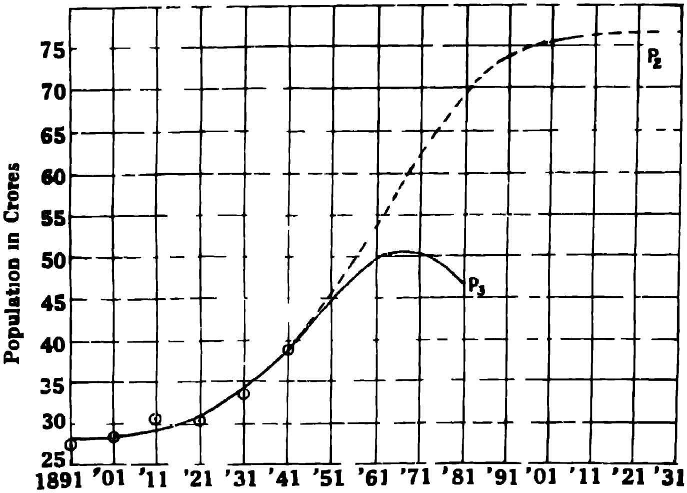


Fig 15.

Showing two curves fitted to the population of India 1891-1941. The observed population is represented by circles

The fundamental equation used is that of an autocatalytic reaction. It was originally formulated by the Chemist W. Ostwald, and later elaborated by others

The observed K's have been smoothed by a parabola of the second and the third order, giving curves P and P respectively

Curve P_3 suggests a population decline setting in about the middle of the decade 1861-71.

---

[20] *Census Report*, 1931, Vol. I, P. 390.

Mathematical curves of population are not to be implicitly trusted. A curve assumes certain conditions. If the conditions do not change, the population predicted by a curve will materialise, not otherwise.

There are special difficulties in the case of India. First, the population data do not cover a sufficiently long period. Second, the movement of population is not regular. The population has increased far more rapidly during the past two decades than ever before.

For India there are two possibilities, indicated by two equations representing curves of a series of K's. The reader is initiated into the mysteries of the K in Appendix A. The first equation is a parabola of the second order and the second a parabola of the third order. We may call the curves P_2 and P_3 respectively. The calculated populations are shown below.

Table 1. 9

Observed and calculated population of India (excluding Burma)

Year	Observed population (Crores)	Calculated Population			
		P	d_2	P	d_3
1891	[illegible]	[illegible]	+ ·11	[illegible]7·87	− ·03
1901	[illegible]	[illegible]	+ ·13	[illegible]	+ ·5[illegible]
1911	30·[illegible]	[illegible]·19	1·11	[illegible]	− ·88
1921	31[illegible]	[illegible]	+ ·35	30·80	+ ·20
1931	[illegible]	34·07	+	33·94	+ ·14
1941	38·[illegible]	[illegible]	+ 0	38·91	+ ·01
1951		45·[illegible]7	+ 1·11	44·70	+ [illegible]
1961		53·94	− 1·11	49·[illegible]0	·91
1971		[illegible]·43		50·0[illegible]	
1981		[illegible]9·33		46·91	
1991		73·75			
2001		75·66			
2011		76·64			

Both curves (see Fig. 15) assume the same maximum population 76·7 crores. The origin in both cases is the same, year 1940 = 0. The expected additions to the population are shown below.

Table I. 10

Expected additions to the population.

	Curve P_2 (crores)	Curve P_3 (crores)
1941-51	6·75	5·79
1951-61	8·27	4·90
1961-71	8·49	0·45
1971-81	6·90	– 3·14
1981-91	4·42	
1991-2001	1·91	
2001-2011	0·98	

The difference between the two versions is striking. Curve P_2 shows continuous and never ending growth—but in the final stages, as the curve approaches the assumed maximum, the population becomes practically stationary. But this will happen, according to curve P_2, when the next century opens. In the meantime we may expect an addition of 6·75 crores to the population in 1941-51 and bigger additions still in 1951-61 and 1961-71. Curve P_2 takes an optimistic view of the possibilities of expansion.

According to curve P_3 the population will never reach the assumed maximum. Conditions governing the growth of numbers remaining unchanged, we may expect an addition of 5·79 crores in 1941-51 and 4·90 crores in 1951-61. The curve rises to its maximum in about the middle of the decade 1961-71, after which a decline sets in.

Curve P_3 is a better approximation to observed values but a curve is not always more reliable for prediction on that account.

Possibly curve P_3 is too pessimistic. But an early check to growth of numbers in India is far more likely than continued expansion as curve P_2 would suggest.

24. Over-Population

Over population is a relative term. The question has to be considered in relation to the natural and other resources of a country. When the sources of wealth production are expanding more rapidly there is no over population. This was the case in the United States between 1849 and 1900. While the population increased about 3·3 times, labourers employed in manufacturing industries increased about 5·7 times, the work done by machines 4·3 times, and the value of industrial production about 15 times.

On the other hand, if the sources of wealth production contract, signs of over-population would appear even if the population remained stationary.

The tests of over-population are easy to apply to an agricultural country. Our main dependence is on agriculture. Is the area under cultivation keeping pace with the growth of numbers?

Between 1921 and 1941 the population increased by over 25 per cent but the area under cultivation remained practically stationary

British India

Year	Net area sown with crops Million acres	Food-grains Million acres	Year	Net area sown with crops Million acres	Food-grains Million acres
1935-36	210	186	1919-20	223	200
1936-37	214	189	1920-21	212	187
1937-38	213	187	1921-22	223	205
1938-39	209	186	1922-23	225	205
1939-40	210	187	1923-24	222	197
Average	211	187	Average	221	199

These figures suggest stationary conditions. Between 1922-23 and 1939-40 the irrigated area increased by 7 million acres. An increase in yields must have taken place. Even then the progress of agriculture has not kept pace with the growth of numbers.

We are confronted with a gloomy situation. There is imperative need, not only for increasing our agricultural production for feeding the growing millions, but also for developing non-agricultural sources of income. Greater production of wealth and better distribution of it would mitigate distress.

But considering the size of our population, continued growth at the rate of 15 per cent in a decade must eventually lower the standard of living, low as it already is. The natural resources of the country are not unlimited. Any solution of our population problem must include controlled production of human beings.

A rise in the standard of living of the masses may be expected to create in them a desire for higher and richer life. An enlightened, well fed, well clothed and properly housed population of 200 millions will be better than a crowd of about 400 millions, most of whom do not know the meaning of education and culture, economically speaking are more dead than alive, and exist only as *balidan* for epidemics.

APPENDIX A

1. Fitting a straight line

The equation of a straight line is

$$y = a + bx$$

a is the intercept on the y axis and b indicates the rate of change. When b is *plus* the straight line slopes down from right to left and when b is *minus* it slopes down from left to right

Two normal equations are used for fitting a straight line

(1) $\Sigma(y) = na + b\Sigma(x)$

(2) $\Sigma(xy) = a\Sigma(x) + b\Sigma(x^2)$

1 For an example we may take the decline in the proportion of the Hindu community

Table A 1

Fitting a straight line by the method of least squares.

The proportion of Hindus per 10 000 of the population

Year	The proportion of Hindus (y)	x	x^2	xy	y (calculated)	Deviation of calculated from observed values
1881	7432	−	9	−22296	7361 4	70 6
1891	7231	−	4	−14462	7235 5	+ 4 5
1901	7034	1	1	034	7109 6	+75 6
1911	6931	0	0	0	6983 7	+52 7
1921	6841	1	1	6841	6857 8	+16 8
1931	6824	2	4	13648	6731 9	−92 1
1941	6593	3	9	19779	6606 0	+13 0
	48886	0	28	−3521		+162 8 −162·7

$$n=7$$
$$\Sigma(y)=48{,}886$$
$$\Sigma(xy)=-3{,}524$$
$$\Sigma(x)=0$$
$$\Sigma(x^2)=28$$

When the number of terms is odd, as in the present case, the origin is taken in the middle of the series for convenience of calculation. x must be evenly spaced. x for 1911 is 0, for 1901, −1; for 1921, +1 and so on.

As $\Sigma(x)=0$, our two normal equations become

(1) $\Sigma(y)=na$

(2) $\Sigma(xy)=b\Sigma(x^2)$

$\Sigma(y)=48{,}886$, and $n=7$,

$$\therefore \quad a=\frac{48{,}886}{7}=6983{\cdot}7$$

$\Sigma(xy)=-3{,}524$, and $\Sigma(x^2)=28$

$$\therefore \quad b=\frac{-3{,}524}{28}=-125{\cdot}9$$

The equation to the fitted straight line is

$$y=6983{\cdot}7-125{\cdot}9\,x.$$

It only remains to calculate the value of y for different values of x

When $x=0$, $y=6983{\cdot}7+0=6983{\cdot}7$

$x=-1$, $y=6983{\cdot}7+(-1\times-125{\cdot}9)=6983{\cdot}7+125{\cdot}9=7109{\cdot}6$

$x=+1$, $y=6983{\cdot}7+(1\times-125{\cdot}9)=6983{\cdot}7-125{\cdot}9=6857{\cdot}8$, and so on.

2. Fitting a parabola of the second order. Cholera mortality, 1920-40

Three normal equations are used for fitting a parabola of the second order, whose equation is

$$y=a+bx+cx^2$$

The normal equations are,

$$\Sigma(y)=na+b\Sigma(x)+c\Sigma(x^2)$$
$$\Sigma(xy)=a\Sigma(x)+b\Sigma(x^2)+c\Sigma(x^3)$$
$$\Sigma(x^2y)=a\Sigma(x^2)+b\Sigma(x^3)+c\Sigma(x^4).$$

The number of terms being odd (21) we take the origin in the centre of the series. $\Sigma(x)$ and $\Sigma(x^3)$ are equal to zero, and our normal equations become

(1) $\Sigma(y)=na+c\Sigma(x^2)$

(2) $\Sigma(xy)=b\Sigma(x^2)$

(3) $\Sigma(x^2y)=a\Sigma(x^2)+b\Sigma(x^4)$.

Table A. 2.

Fitting a parabola of the second order to cholera mortality 1920-40.

Year	y	x	xy	x^2y	y_c
1920	0·6	−10	−6·0	60·0	0·858
1921	1·9	9	−17·1	153·9	0·882
1922	0·5	−8	−4·0	32·0	0·901
1923	0·3	−7	−2·1	14·7	0·915
1924	1·2	−6	−7·2	43·2	0·924
1925	0·5	−5	−2·5	12·5	0·927
1926	0·5	4	2·0	8·0	0·926
1927	1·2	3	3·6	10·8	0·919
1928	1·4	−2	−2·8	5·6	0·908
1929	1·2	−1	1·2	1·2	0·891
1930	1·3	0	0	0	0·869
1931	0·9	1	0·9	0·9	0·843
1932	0·3	2	0·6	1·2	0·811
1933	0·3	3	0·9	2·7	0·774
1934	0·8	4	3·2	12·8	0·732
1935	0·8	5	4·0	20·0	0·684
1936	0·6	6	3·6	21·6	0·632
1937	0·4	7	2·8	19·6	0·575
1938	0·9	8	7·2	57·6	0·512
1939	0·4	9	3·6	32·4	0·445
1940	0·3	10	3·0	30·0	0·372
	16·3		−18·7	540·7	

$n = 21$
$\Sigma(y) = 16·3$
$\Sigma(xy) = -18·7$
$\Sigma(x^2y) = 540·7$
$\Sigma x^2 = 770$
$\Sigma x^4 = 50666$

The equations to be solved are

(1) $16·3 = 21a + 770c$
(2) $-18·7 = 770b$
(3) $540·7 = 770a + 50666c$.

$$b = \frac{-18·7}{770} = -·02429$$

To find the value of c we solve equations (1) and (3) as simultaneous equations.

Multiplying equation (1) by 36 and subtracting the product from equation (3) we get

Equation (3) $540·70 = 770a + 50666·00c$
Equation (1) × 36, $597·67 = 770a + 28233·33c$

$$-56·97 = 22432·67c$$

$$\therefore \quad c = \frac{-56·97}{22432·67} = -·00254$$

To find the value of a, the value of c may be substituted either in equation (1) or in equation (3).

$$(1)\qquad 16{\cdot}3 = 21a + 770\,c$$
$$= 21a - 1{\cdot}9558$$
$$16{\cdot}3 + 1{\cdot}9558 = 21a$$
$$18{\cdot}2558 = 21a$$
$$\therefore\quad a = {\cdot}8693$$

The equation to the fitted curve is

$$y = {\cdot}8693 - {\cdot}02429x - {\cdot}00254x^2$$

What is y when $x = -9$?

$$y = {\cdot}8693 - (9 \times -0{\cdot}2429) + (81 \times -{\cdot}00254)$$
$$= {\cdot}8693 + {\cdot}21861 - {\cdot}20574$$
$$= {\cdot}8822$$

and so on.

The value of $\Sigma(x^2)$, $\Sigma(x^4)$ etc., may be taken from prepared tables giving the sums of natural powers of x.

As an exercise the reader may fit straight lines the data and equations for which are given below.

Table A. 3

Rates of Mortality

	Plague		Small pox		Cholera	
Year	y	y_c	y	y_c	y	y_c
1920	40	721	·4	316	0 6	·858
1921	·30	687	2	313	1 9	·882
1922	30	·653	2	·310	0 5	·901
1923	·90	·619	2	307	0 3	·915
1924	1 50	·585	·2	304	1·2	·924
1925	·50	·551	3	·301	0 5	·927
1926	·80	517	·5	298	0·5	·926
1927	20	483	·5	·295	1·2	·919
1928	50	·449	4	292	1·4	·908
1929	·50	·415	·3	·289	1 2	·891
1930	80	381	·8	286	1·3	·869
1931	20	347	·1	·283	·9	·843
1932	·20	313	2	280	·3	·811
1933	·20	279	·1	·277	3	·774
1934	·30	·245	·3	274	·8	·732
1935	·10	211	·3	271	·8	·684
1936	04	177	4	268	6	·632
1937	·10	·143	·2	·265	·4	575
1938	·06	·109	·1	262	·9	·512
1939	10	075	·2	·259	·4	445
1940	70	041	3	·256	·3	·372

Table A. 4.

Year	Birth Rate		Death Rats		Infant mortality	
	y_o	y_c	y_o	y_c	y_o	y_c
1920	33	32·554	31	27·17	195	189·11
1921	32	32·670	31	27·18	198	187·67
1922	32	32·786	24	26·89	175	186 23
1923	34	32·902	25	26·60	176	185·79
1924	33	30·018	28	26 31	189	184·35
1925	32	33 134	24	26·02	174	182·91
1926	33	33 250	25	25·73	189	180 47
1927	33	33 266	23	25·44	167	179 03
1928	34	33·182	24	25·15	173	177·59
1929	33	33 598	24	24·86	178	176 15
1930	33	33·714	25	24·57	178	174·71
1931	35	33·830	25	24·28	179	173·27
1932	34	33·946	22	23·91	169	171 83
1933	36	34·062	23	23·70	171	170·39
1934	34	34 178	25	23·41	187	168·95
1935	35	34·294	24	23 12	164	167·51
1936	36	34·410	23	22·83	162	166·07
1937	35	34 526	22	22 54	162	164·63
1938	34	34·642	24	22·25	167	163·19
1939	34	34·758	22	21 96	156	161·75
1940	33	34·874	22	21 67	160	160·31

Equations

Birth rate $y = 33·714 + ·116x$
Death rate $y = 24·57 - ·29x$
Infant mortality $y = 174·71 - 1·44x$
Plague mortality $y = ·381 - ·0339x$
Small pox mortality $y = ·286 - ·003x$

3. Fitting the Gompertz curve

The Gompertz curve has been used in the Census Tables, 1941, to smooth the fertility rates It has the equation :

$$y = Kab^x,$$

$$\log y = \log K + (\log a)b^x$$

The following formulæ are used to find the value of the constants.

$$b^n = \frac{\Sigma_3 \log y - \Sigma_2 \log y}{\Sigma_2 \log y - \Sigma_1 \log y}$$

$$\log a = (\Sigma_2 \log y - \Sigma_1 \log y)\frac{b-1}{(b^n-1)^2}.$$

$$\log K = \frac{1}{n}\left[\Sigma_1 \log y - \left(\frac{b^n-1}{b-1}\right)\log a\right].$$

The series is divided into three equal portions. In our example there are 36 years of age and $b = b^{12}$.

The calculations are shown in table A 5. We have saved a column b^x.

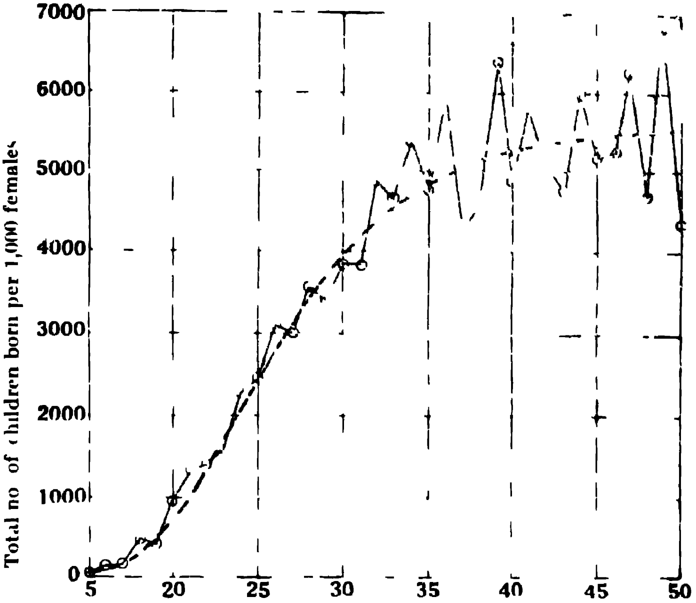


Fig. 16

Showing the number of children born per 1,000 females in fifteen villages selected at random in Ajmer-Merwara (Census of 1911) and the Gompertz curve. For data, see Table A 5. The equation to the fitted curve is

$$y = 5580{\cdot}2139\,({\cdot}000662919)^{({\cdot}837858892)^x}$$

where x = 0 for age 15 and increases by unity for each successive year of age

$$b = b^{12} = \frac{\Sigma_3 \log y - \Sigma_2 \log y}{\Sigma_2 \log y - \Sigma_1 \log y} = \frac{14{\cdot}79061 - 13{\cdot}54613}{13{\cdot}54613 - 3{\cdot}14844} = \frac{1{\cdot}24448}{10{\cdot}39769}$$

$$= {\cdot}119688123$$

$$= \log \bar{1}{\cdot}07805108619 \qquad \log b = \bar{1}{\cdot}92317092387$$

$$\text{anti log} = {\cdot}837858892$$

when $x = 0$, $b^x = ({\cdot}837858892)^0 = 1$ when $x = 1$, $b^x = {\cdot}837858892$

when $x = 2$ $b^x = ({\cdot}837858892)^2 = 2 \log {\cdot}837858892 = 2 \times \bar{1}{\cdot}92317092387$

$$= \bar{1}{\cdot}84634184774$$

The difference between log $b(\bar{1}{\cdot}92317092387)$ and log $b^2(\bar{1}{\cdot}84634184774)$ is ·07682907613. Subtracting this amount 11 times from log b we obtain log $\bar{1}{\cdot}07805108644$, which is the log of b^{12}. To find b^1, we subtract the difference between log b and log b^2 12 times from log b and take the anti log, and so on.

$$\text{Log } a = (\Sigma_2 \log y - \Sigma_1 \log y)\frac{b-1}{(b^n-1)^2} - 10{\cdot}39769\,\frac{{\cdot}837858892-1}{({\cdot}119688123-1)^2}$$

$$= (10{\cdot}39769)\frac{-{\cdot}162141108}{(-{\cdot}880311877)^2} \quad (10{\cdot}39769)\frac{-{\cdot}162141108}{-{\cdot}7749490008}$$

$$= -2{\cdot}175488936.$$

When $x = 0$, $(\log a)b^x = -2{\cdot}175488936$

When $x = 1$, $(\log a)b^x = (-2{\cdot}175488936)({\cdot}837858892)$

log 2·175488936 ·33755688720

log ·837858892 $\bar{1}{\cdot}92317098387$

Adding the two amounts we get ·26072781107

This is precisely the result we obtain by subtracting from the log of log a the difference between log b and log b (·07682907613). To find $(\log a)b^x$ we therefore successively subtract ·07682907613 from the log of log a and take the antilog. For example:

$(\log a)b^x$, when $x = 35 = \log 2{\cdot}175488936 - (35 \times {\cdot}07682907613)$

$$= {\cdot}33755688720 - 2{\cdot}68901766455$$

$$\bar{3}{\cdot}64853922265$$

antilog = ·0054518 with the minus sign before it (log a having the minus sign before it)

$$\log k = \frac{1}{n}\left\{\Sigma_1 \log y - \left(\frac{b^n-1}{b-1}\right)\log a\right\}$$

$$= \frac{1}{12}\left\{33{\cdot}14844 - \frac{-{\cdot}880311877}{-{\cdot}162141108} \times -2{\cdot}175488936\right\}$$

$$= \tfrac{1}{12}(33{\cdot}14844 + 11{\cdot}8113708) = 3{\cdot}7466509$$

antilog = 5580·2139

log $a = -2{\cdot}175488936 = 8{\cdot}824511064 - 10 = \bar{2}{\cdot}824511068$

antilog ·006675919

The equation to the fitted curve is

$$y = 5580{\cdot}2139\,({\cdot}006675919)^{({\cdot}837858892)^x}$$

where $x = 0$ for age 15 and increases by unity for each successive year of life.

The last three columns of Table A.5 require little explanation. The calculated values of y are found by taking the antilog of figures in the preceding column. Specific fertility rates are the first differences of y_x (37·25 − 14·13 = 23·1 and so on). The first differences of the Gompertz curve always give a bell shaped curve with positive skewness, that is, the curve has a longer tail stretching towards the right than to the left. The calculations made for extending the curve in both directions are shown in Table A.6.

Table A 5

Fitting the Gompertz curve to Fertility Rates.

Age	y	Log y	x	(Log a)b^x	Log k + (log a)b^x	y_c	Specific fertility rates
14						14·13	
15	11	1·04139	0	– 2·1754889	1·5711620	37·25	23·1
16	104	2·01703	1	– 1·8227546	1·9238963	83·93	46·7
17	148	2·15534	2	1·5272099	2·2194408	165·75	81·8
18	476	2·67761	3	1·2795866	2·4670613	293·19	127·4
19	407	2·60959	4	– 1·0721130	2·6745379	472·64	179·5
20	909	2·95856	5	·8982796	2·8483713	705·30	232·7
21	1313	3·11826	6	– ·7526315	2·9940193	986·32	281·0
22	1387	3·14208	7	– ·6305991	3·1160601	1306·4	320·0
23	1565	3·19451	8	– ·5283531	3·2182978	1653·1	340·8
24	2265	3·35507	9	– ·4426854	3·3039655	2013·6	360·5
25	2443	3·38792	10	– ·3709080	3·3757429	2375·4	361·9
26	3098	3·49108	11	– ·3107685	3·4358824	2728·2	352·8
Σ_1Log y 33·14844*					*33·1184406		
27	3000	3·47712	12	– ·2603802	3·4862707	3063·9	335·7
28	3514	3·54580	13	– ·2181619	3·5284910	3370·7	312·8
29	3381	3·52905	14	– ·1827890	3·5638618	3663·2	286·5
30	3822	3·58229	15	– ·1531513	3·5934996	3921·9	268·7
31	8813	3·58127	16	– ·1283192	3·6183317	4152·7	230·8
32	4896	3·68984	17	·1075134	3·6391375	4356·5	203·8
33	4636	3·66614	18	– ·0900811	3·6565698	4534·9	178·4
34	5385	3·73119	19	– ·0751752	3·6711757	4690·9	155·1
35	4771	3·67861	20	– ·0632376	3·6834133	4824·1	134·1
36	6000	3·77815	21	·0529842	3·6936667	4939·3	115·2
37	4222	3·62552	22	·0443927	3·7022576	5038·0	98·7
38	4583	3·66115	23	– ·0371953	3·7091556	5122·2	84·2
Σ_2Log y 43·51613*					*43·5161310		
39	6400	3·80618	24	– ·0311644	3·7151865	5193·8	71·6
40	4878	3·68824	25	– ·0261114	3·7205395	5254·6	60·8
41	5786	3·76238	26	– ·0218777	3·7247732	5306·1	51·5
42	5091	3·70680	27	– ·0183304	3·7283205	5349·6	43·5
43	4750	3·67669	28	– .0153583	3·7312926	5386·3	36·7
44	6000	3·77815	29	– ·0128681	3·7337828	5417·3	31·0
45	5152	3·71198	30	– ·0107816	3·7358693	5443·4	26·1
46	5222	3·71784	31	– ·0090335	3·7376174	5465·4	22·0
47	6286	3·79837	32	– ·0075688	3·7390821	5483·8	18·4
48	4692	3·67136	33	– ·0063416	3·7403093	5499·3	15·5
49	6857	3·83613	34	– ·0053133	3·7413376	5512·4	13·1
50	4330	3·63649	35	– ·0054518	3·7421991	5523·3	10·9
Σ_3Log y 44·79061*					*44·7900000		

Table A. 6

Age	x	(Log a) b^x	Log k + (log a) b^x	y_c	First differences
12	−3	−3·6986570	·0479939	1·12	1·1
13	−2	−3·0989524	·6476985	4·44	3·3
14	−1	−2·5964857	1·1501652	14·13	9·7
51	36	−·0037300	3·7429209	5523·4	1·9
52	37	−·0031252	3·7435257	5532·5	7·7
53	38	−·0026185	3·7440324	5540·2	6·5
54	39	−·0021939	3·7444570	5546·7	5·4
55	40	·0018382	3·7448127	5557·1	4·6
56	41	·0015402	3·7451107	5556·7	3·8
57	42	−·0012901	3·7453605	5560·5	3·2
58	43	−·0010812	3·7455697	5563·6	2·6
59	44	−·0009059	3·7457150	5568·6	2·3
60	45	−·0007590	3·7458919	5570·5	1·9

The modified exponential

$$y = k + ab$$

gives higher values than the Gompertz curve towards the end but negative values for the earliest years, which have no meaning. It was therefore rejected as unsuitable in the present case.

The modified exponential describes a series the growth increments of which decline by a constant percentage. In the case of the Gompertz curve the growth increments of the logarithms decline by a constant percentage Σ_0, Σ Σ log y provide a very useful check on calculations. If the calculated values differ materially from observed values a mistake has been made somewhere. These totals must be approximately identical.

4. Fitting a curve to the population of India, 1891-1941.

The fundamental equation used in fitting the curve is

$$\log \frac{x}{a-x} = K(t - t_1),$$

where x is the observed population in any year, a is the assumed maximum population which India may or may not attain, t_1 is the time when $x = \frac{a}{2}$, and K is a constant.

t_1 = the year 1940. What was the population of India in the year 1940 ?

Table A 7.

Fitting a curve to the Population of India, 1891-1941.

1	2	3	4	5	6	7	8	9	10
Year	Population. Crores.	$t-t_1$	K	$K(P_2)$	$y(P_2)$, crores	d	$K(P_3)$	$y_c(P_3)$, crores	d
1891	27·9	−49	·0049554	·0047352	28·34	+·44	·0049718	27·87	−·03
1901	28·1	−39	·0059136	·0058965	28·13	+·03	·0055677	28·66	+·56
1911	30·3	−29	·0063819	·0072953	29·19	−1·11	·0071073	29·42	−·88
1921	30·6	−19	·0093673	·0089315	30·95	+·35	·0091194	30·80	+·20
1931	33·8	−9	·0115045	·0108053	34·07	+·27	·0111341	33·94	+·14
1941	38·9	+1	·0124578	·0129166	38·92	+·02	·0126818	38·91	+·01
						+1·11			+·91
						−1·11			−·91

Equations

$n = 6$
$\Sigma(y) = \cdot 0505805$
$\Sigma(xy) = \cdot 2056668$
$\Sigma(x^2y) = 9720170$
$\Sigma(x^3y) = 4\cdot 9530300$
$\Sigma(x) = 21$
$\Sigma(x^2) = 91$
$\Sigma(x^3) = 441$
$\Sigma(x^4) = 2275$
$\Sigma(x^5) = 12201$
$\Sigma(x)^6 = 67171$

$P_2.\ y = \cdot 0038114 + \cdot 0080503x + \cdot 00011875x^2$
$P_3.\ y = \cdot 0057841 - \cdot 0016765x + \cdot 0009407x^2 - \cdot 00007828x^3$

Normal equations used for fitting a parabola of the 3rd order:

(1) $\Sigma(y) = na + b\Sigma(x) + c\Sigma(x^2) + d\Sigma(x^3)$
(2) $\Sigma(xy) = a\Sigma(x) + b\Sigma(x^2) + c\Sigma(x^3) + d\Sigma(x^4)$
(3) $\Sigma(x^2y) = a\Sigma(x^2) + b\Sigma(x^3) + c\Sigma(x^4) + d\Sigma(x^5)$
(4) $\Sigma(x^3y) = a\Sigma(x^3) + b\Sigma(x^4) + c\Sigma(x^5) + d\Sigma(x^6)$

Between 1931 and 1941 the population of India increased from 33.8 to 38.9 crores. What was the logarithmic rate of increase?

$$\log R = \frac{\log a - \log p}{t} \quad (a = \text{amount},\ p = \text{principal},\ t = \text{time})$$

$$= \frac{\log 38.9 - \log 33.8}{10} = \frac{1.5899496 - 1.5289167}{10} = \cdot 00610329$$

$\log a = \log p + t \log R$ $\log 33.8 + 9 \times \cdot 00610329 = 1.5289167 + .0549296$
$= 1.5838463$

anti log 38.35715

The estimated population of India in 1940 was thus 38.35715 crores. Double of this 76.7 crores we take as our a. The origin is thus fixed at 1940 for which $t - t_1 = 0$.

$t - t_1$ for 1931 is 9 and that for 1941 +1. 1891 is 49 years removed from the origin 1940 and $t - t_1$ for 1891 is thus -49, and so on.

Having secured our a and the values of $t - t_1$ we proceed to calculate K. From the fundamental equation we learn that

$$K = \frac{\log \frac{x}{a - x}}{t - t_1}$$

when $x = 27.9$ (1891) what is $\log \frac{x}{a - x}$?

$$\log \frac{27.9}{76.7 - 27.9} = \log 27.9 - \log 48.8 = 1.4456042 - 1.6884198$$
$$2428156$$

Dividing this by $t - t_1$ for 1891 = 49, K for 1891 is found to be .0049551

The value of $\log \frac{x}{a}$ for different years is shown below:

	$\log \frac{x}{a - x}$	$t - t_1$
1891	2428156	49
1901	2306288	39
1911	1850751	29
1921	1779795	19
1931	1035106	9
1941	+ 0124578	+1

Dividing these values by $t - t_1$ for each year we get the values of K which we call k (observed K) (Col. 3 of Table A)

The value of K rises from .0049551 for 1891 to .0124578 for 1940—a very considerable variation. We smooth the rise by fitting parabolas of the second (P_2) and the third order (P_3) to these values by the method of least squares. The calculated population is obtained from these theoretical values of K with the help of the equation

$$x = \frac{a10^{K(t - t_1)}}{1 + 10^{K(t - t_1)}}$$

where x = the required populations.

According to the parabola of the third order K for 1891 is .0049718. Let us turn it into population:

$$x = \frac{(76.7)10^{-49(.0049718)}}{1 + 10^{-49(.0049718)}}.$$

$$=\frac{(76\cdot7)10^{\text{[illegible]}}}{1+10^{\text{[illegible]}}}=\left(76\cdot7\times\frac{1}{10^{\text{[illegible]}}}\right)\div1+\frac{1}{10^{\text{[illegible]}}}$$

$$=\frac{76\cdot7}{1\cdot7523}\quad 1+\frac{1}{1\cdot7523}\quad\frac{43\cdot771}{1\cdot5707}=27\cdot87.$$

What is x for 1941 ?

$$x=\frac{(76\cdot7)10^{\text{[illegible]}}}{1+10^{\text{[illegible]}}}=\frac{76\cdot7\times1\cdot0296}{1+1\cdot0296}\quad\frac{78\cdot97032}{2\cdot0296}=38\cdot91$$

The parabolas fitted to the series of K, enable us to find K for other years (shown below) and to calculate the future population. The origin is so chosen that a regularly moving set of K's is obtained.

Table A. 8.

Parabola of the Second Order

	$t-t_1$	x	K^x	y
1951	11	7	0152654	45 67
61	21	8	0178516	53 94
71	31	9	0206755	62·63
81	41	10	·0237367	69 33
91	51	11	0270355	73·75
2001	61	12	·0305718	75 66
2011	71	13	0343456	76 42
2021	81	14	0383569	76·64

Parabola of the Third Order.

1951	11	7	0131929	44·70
1961	21	8	·0124975	49 60
1971	31	9	0088262	50 05
1981	41	10	·0048091	46·91

The more regular the movement of K's the more exactly it could be represented by a mathematical equation and the better would be the fit obtained

The technique we have employed is not more complicated than that of the famous Logistic of Prof Pearl. The Logistic, however, is a curve of population growth only. It cannot reveal the possibility of a decline. The Logistic has the equation—

$$y=\frac{K}{1+e^{a+bx}}$$

CHAPTER II

AGRICULTURE

1. The State in relation to Agriculture.

The Lancashire Cotton trade 'has frequently exercised considerable influence in shaping the agricultural policy of the Government of India'.[1] In 1869 the Manchester Cotton Supply Association suggested the establishment of a separate Department of Agriculture in each province.

A Central Department of Revenue, Agriculture and Commerce came into existence and functioned from 1871 to 1879.

The Report of the Famine Commission of 1880 eventually led to the establishment of provincial departments of agriculture.

The recommendations of the Famine Commission of 1901 led to the establishment of co-operative credit societies and a great expansion of provincial departments of agriculture after 1905.

An Imperial Research Institute was founded at Pusa. This Institute has now been transferred to Delhi. Other institutes are concerned with animal husbandry, dairying, sugar-cane breeding and veterinary research.

The report of the Indian Cotton Committee of 1917-18 led to the formation of the Indian Central Cotton Committee in 1921 with a legal status. The Committee is concerned with the improvement of cotton cultivation and marketing.

At present agricultural research throughout India is directed and co-ordinated by the Imperial Council of Agricultural Research which is financed by the Central Government.

2. Reports on the Improvement of Indian Agriculture.

In 1889 Dr. J. A. Voelcker came to India to advise upon the application of agricultural chemistry to Indian conditions. His report may still be read with interest and profit.

---

[1] *Report of the Agricultural Commission*, 1928, P. 15.

Dr. Voelcker noted the diversity of agricultural conditions in India. "What is true of one part will not be true of another." He did not regard Indian agriculture as primitive or backward. At his best, he found the Indian *raiyat* or cultivator "quite as good as, and in some respects, the superior of the average British farmer."[2] But Dr. Voelcker was struck by the absence of facilities for improvement—he referred particularly to water and manure. So far as ordinary acts of husbandry are concerned "nowhere would one find better instances of keeping land scrupulously clear from weeds, of ingenuity in device of water-raising appliances, of knowledge of soils and their capabilities, as well as of the exact time to sow and to reap, as one would in Indian agriculture, and this not at its best alone, but at its ordinary level. It is wonderful, too, how much is known of rotation, the system of 'mixed crops' and of fallowing. Certain it is that I, at least, have never seen a more perfect picture of careful cultivation, combined with hard labour, perseverance and fertility of resource that I have seen at many of the halting places in my tour."

Differences of agricultural conditions arose from differences inherent to the people themselves as cultivators, (*e.g.*, caste and race distinctions), from external surroundings (climate soil, varying facilities for water, manure, wood and grazing etc.), and also from want of knowledge.

Soil. Dr. Voelcker did not find positive evidence in support of exhaustion of the soil, but he thought that a gradual deterioration of the soil was likely on account of export of food-grains, oil seeds and manures, and the burning of cattle dung for fuel. Organic matter (*humus*) and nitrogen were generally deficient in Indian soils, but lime, potash and phosphoric acid were. as a rule, present in sufficiency,

Manure. On account of the close connection between the supply of fire wood and that of manure, Dr. Voelcker *recommended the* establishment of Fuel and Fodder *Reserves. He found that cultivators were not taking full advantage of the facilities they possessed in regard to utilisation of night soil for agricultural purposes, and conservation of cattle manure and urine.*

Live stock. Little or no attention was paid by cultivators to the breeding and selection of cattle. Dr Voelcker recommended the continuance and extension of cattle farms and distribution of stud bulls from them to villages the establishment of Government dairy farms and the prosecution of enquiry into cattle diseases.

Implements. The trial of new implements at Government Experimental Farms was recommended Approved implements were to be distributed from the Experimental Farms.

---

[2] *Dr. Voelcker's Report*, P. 11.

Our agricultural problems were comprehensively reviewed by the Indian Agricultural Commission of 1928 Lord Linlithgow, who later became Viceroy, was the chairman of the Commission. The commission dealt with a great variety of topics including rural marketing, and the financing of agriculture which we shall discuss later in this book.

3. Agricultural Research

The establishment of the Imperial Council of Agricultural Research was one of the results of this Commission "The basis of all agricultural progress is experiment" The Pusa Institute was not sufficient and a new organisation was needed to connect Pusa and the provincial research institutes. The Imperial Council of Agricultural Research was to act as a clearing house of information. As a link with the Central Research Council, Provincial Research Committees were to be established. Emphasis was also laid on the training of research workers

4. Demonstration and Propaganda.

The best method of convincing the cultivator of the advantages of agricultural improvement is occular demonstration. As a rule demonstration work is not carried out on experimental farms Two systems of demonstration on the cultivator's own fields are employed. In the first, cultivation is carried on throughout by the departmental staff on a hired plot. In the second, cultivation is carried on by the cultivator himself under the supervision of the agricultural demonstrator. In case of failure some compensation is paid to the cultivator.

Improved implements are popularised by peripatetic demonstrations.

Demonstration trains fitted up as a travelling exhibition have also been employed in Bengal and the Punjab for propaganda purposes A demonstration train is used not only by the Department of Agriculture but also by Public Health, Industries, Co operative and Veterinary departments.

5 Agricultural Improvement.

The soils of India vary a great deal in agricultural properties. A survey of soils is desirable, but the Commission did not regard a soil survey for the whole of India as a practicable proposition.

In regard to fertility, the Commission took the view that in an overwhelming proportion of lands a balance had been established and that no further deterioration was likely under existing conditions of cultivation.

The best methods of preventing soil deterioration as a result of erosion of the surface soil by flood water are the afforestation of ravine tracts, the terracing of land and the construction of earth and stone embankments.

In regard to manure, there is no satisfactory alternative to farm-yard manure where coal and wood are dear. There would be less wastage of farm-yard manure if the refuse of crops such as cotton stalks, megass etc. were more largely used as fuel.

Oil seeds, if applied as manure in the form of cake, would give a very large supply of combined nitrogen. They are not much used for this purpose at present. An extension of the oil-crushing industry would benefit the Indian agriculturist in more than one way.

Other forms of manure which supply both nitrogen and phosphates are bones and bone-meal, and fish manure. The Commission were not in favour of restricting or prohibiting the export of oil-seeds and oil cakes, bones and bone-meal, or fish manures.

6. Improved Varieties of Crops.

The area under improved varieties of crops was estimated by the Commission to exceed 9 million acres. The crops in which the greatest advance has been made are cotton, wheat, rice, groundnut and jute. There is great scope for further work in regard to millets, pulses and oil-seeds.

There are three methods of obtaining improved varieties, selection, hybridisation, and acclimatisation. The last means the adaptation of exotic varieties to Indian conditions, of which Combodia cotton is an example. Of the three methods, selection is the most hopeful line.

How are improved varieties of seed to be distributed? Seed merchants practically do not exist in India. In their absence the selection and distribution of pure seed must be controlled by agricultural departments.

Agricultural engineering is concerned with well-sinking and implements. Before indigenous implements are discarded in favour of foreign designs, exhaustive trials are necessary. The aim of the agricultural departments should be the evolution of a small number of types of implements and machinery suitable for a wide range of conditions and also for mass production in India.

7. Steam tackle and motor tractors.

On the basis of certain experiments made in Pusa it was concluded that a tractor would displace 8 to 10 pairs of bullocks, and that the scope for the use of tractors in India was therefore enormous. But power-machinery is useful where the farms are of large size, and there is scarcity of labour. In India the holdings are small and of agricultural labour there is a surplus. The scope for the use of power-machinery in India under existing conditions of cultivation seems limited.

The Indian Sugar Committee concluded that steam tackle would effect economies in the cost of cane-cultivation, provided the areas cultivated were large enough to keep it fully employed. There is also scope for the use of tractors.

There is no definite evidence on the basis of which the advantages of power cultivation under Indian conditions could be demonstrated. But the subject deserves fuller investigation. The cost of bullock cultivation is high and the work done by bullocks through the year is intermittent. Bullocks require to be fed for the whole year even if they work for three months in the year. The more intermittent the water, the more ecnomical would be the tractor, for when it is laid up, much of the cost of working it is saved.

8. Sub-division and Fragmentation of holdings.

Sub-division means the distribution of the land of a common ancestor, usually in accordance with the laws of inheritance, among his successors in interest.

Fragmentation refers to the manner in which the land held by an individual is scattered throughout the village area in plots separated by land in the possession of others. Twenty acres owned by an individual may lie in one place in the form of a compact holding, or be scattered in the form of small plots all over a village.

Suppose each son is given a share in each plot of land. Sub-division of land would then be reflected in the fragmentation of cultivation. But even if sub-division of land were prevented by the law of primogeniture, there will be fragmentation of cultivation if the owner does not cultivate the land himself, but gives it on rent to several tenants.

9. Owners' and Cultivators' holdings in the Punjab.

Valuable information about the size of owners' and cultivators' holdings is supplied by two publications of the Board of

Economic Enquiry, Punjab.[3] The investigations were carried out by Mr. H. C. Calvert in about 1922-23.

Table II. 1.

Size of owners' holdings.

Per cent of owners	Land owned. Acres	Land owned as percentage of total cultivated area
17·9	1	1
40·4	1—5	11
26·2	5—15	26·6
11·8	15—50	35·6
3·7	50 and more	25·7

The distribution of land among owners is very unequal. 58·3 per cent of the total number of owners, owing each less than 5 acres, hold about 12 per cent of the land, while 3·7 per cent of the largest class of owners (50 and more acres), hold more than one-quarter of the total cultivated land.

Assuming that the total cultivated area in the province is 29 million acres, and that the total number of owners is 3,500,000, the distribution is as shown below :—

Table II. 2. (*a*)

No. of owners	Land owned. Acres.
625,400 (17·9%)	313,000 (1%)
1,428,000 (40·4%)	3,200,000 (11%)
919,000 (26·2%)	7,753,300 (26·6%)
313,000 (11·8%)	10,300,000 (35 6%)
121,000 (3·7%)	7,452,000 (25 7%)

The inequality in the distribution of owned land is illustrated in Fig 17 by means of the Lorenz curve.

Table II. 2. (*b*)

Cumulative figures.

Per cent of owners	Percent of land owned.
17·9	1·0
58·3	12·6
84·5	38·6
96·3	74·2
100·0	99·9

---

[3] *The Size and Distribution of Agricultural Holdings in the Punjab*, 1925, and *The Size and Distribution of Cultivators' Holdings in the Punjab*, 1928.

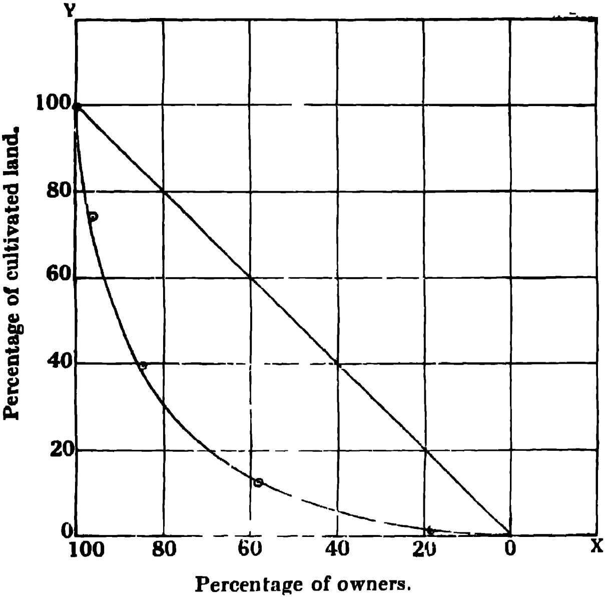


Fig. 17.

Showing the distribution of agricultural holdings in the Punjab. For data see Table II. 2 (*b*). The equation to the fitted curve is

$$y = -66\ 4 + 5{\cdot}6525x - 1207x^2 + {\cdot}0008064x^3$$

Land owned is shown on the X-axis and owners on the Y-axis. The straight line connecting 0 and 100 is known as the line of equal distribution. If distribution were equal, 40 , of the owners would own 40 % of the land The curve is convex to the origin, that is, the concave or hollow side of the curve faces, not the origin, but the straight line. As distribution tended to become less and less uneven, the curve would tend to approach the line of equal distribution.

10. The Size of and Distribution of Cultivators' Holdings in the Punjab.

The table printed on page 57 brings out the contrast between land owned and land cultivated :

The percentage of cultivators in the last two groups is less than that of owners, showing that when the land owned is 20 or more acres, many owners do not cultivate themselves. For the other groups there are more cultivators than owners. The excess is drawn from the class of landless tenants. The number of owners in the owners' inquiry was taken as

Table II. 3

Group	Percentage of cultivated land	
	owned by owners in the Group.	cultivated by cultivators in the Group.
1 acre and less	1·0	1·5
More than 1 acre and less than 5 acres	11·0	12·1
„ 5 „ 10	15·1	20·6
„ 10 „ 15	11·5	17·4
„ 15 „ 20	8·4	12·3
„ 20 „ 25	6·8	9·1
„ 25 „ 50	20·4	18·5
50 acres and over	25·7	7·9

3,500,000 ; the number of cultivators suggested by the cultivators' inquiry was about 4,031,000. It is obvious that the landless tenant class is more numerous than the class of non-cultivating owners.

The following districts of the Punjab show 50 per cent of their cultivators cultivating 2½ acres and less—Simla, Kangra, Hoshiarpur, Rawalpindi, Jullundhar and Sialkot. In 19 districts the percentage of cultivators cultivating 5 acres and less is over 50.

11. Remedy against sub-division of holdings.

An increase in the number of owners must reduce the average area held by each owner. The heavy increase in the number of agriculturists during 1921-41 must have reduced the average area of the holding in India.

The creation of 'impartible' holdings would check sub-division. The idea is that when a holding, in the process of sub-division, has reached a certain minimum size, its further sub-division should not be permitted. But it involves intereference with the laws of inheritance, and this is a difficult matter when no alternative occupations can be found for the disinherited. The creation of a land-less proletariat is always a source of political danger. Other objections have also force :

1. It is not easy to determine what constitutes an economic holding which may be declared impartible.

2. The credit of the agricultural classes would be impaired.

3. All transactions in land would be complicated by the question whether the condition of impartibility existed.

4. It would be a fertile source of family strife. In Belgium the eldest son buys out the rest through the agency of mortgage bonds, but this device cannot be adopted until more occupations alternative to land become available.

12.✓ Remedy against Fragmentation.

Sub-division of land which continually reduces the size of the holding is a great evil, but the fragmentation of land or sub division of cultivation is a still greater evil. "The sub-division amongst cultivators is a reflection of conditions existing among permanent right-holders, but it is aggravated by the lack of alternative means of livelihood which drives multitudes to grow food for bare subsistence."[4]

It is customary in dividing property amongst heirs to give to each heir a proportionate share of each item, that is each plot, of the inherited property. Sub-division of land thus leads to increased fragmentation. Mr. Keatinge of Bombay described it as "an unmitigated evil for which no advantages can be claimed." Small plots cannot be fenced nor can wells be sunk in them, and the cultivator has to waste time in going from one plot to another. "Even where cultivation is possible, fragmentation involves endless waste of time, money and effort; it restrains the cultivators from attempting improvements; it enforces uniformity of cropping and especially restricts the growing of fodder crops in the period when the cattle are usually sent out to graze on the fields."[5]

Voluntary consolidation of holdings has been successfully tried in the Punjab and elsewhere as a remedy against fragmentation. Compact holdings are created in the place of scattered holdings with advantage to the parties concerned. Consolidation has led to well-sinking and other improvements.

13. ✓Cultivators and the Size of the Holding.

There is an interesting table given in the Report of the Agricultural Commission[6] correlating the number of bullocks with the number of cultivators with the average size of the holding :

(See Table on *p. 59* top.)

---

[4] ***Report of the Indian Agricultural Commission,*** **1928, P 183**

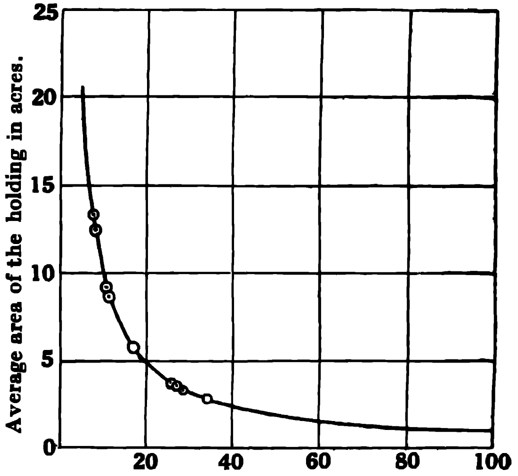
[5] ***Ibid.*** **P. 135.**

[6] ***Ibid.*** **P. 182.**

Table II. 4.

	Per 100 acres of net sown area		Average area of holding
	Bullocks No.	Cultivators, (male workers) No.	Acres
Bombay (including Sind)	10	8 1	12·4
Burma	11	11·5	8·7
C.P. and Berar	15	7·6	13 2
Madras	15	17·3	5·8
Punjab	16	11·2	9·0
Bihar and Orissa	27	26·8	3·7
Assam	27	27·5	3·6
U. P.	29	29·1	3·4
Bengal	36	35·2	2·8

It is seen that the number of bullocks increases with the number of cultivators, while the average size of the holding decreases with an increase in the number of cultivators. There is thus direct correlation between the number of bullocks and that of cultivators, and inverse correlation between the number of cultivators and the size of the holding.



Number of cultivators per 100 acres of net sown area.

Fig. 18.

Showing the correlation between the number of cultivators and the average size of the holding. For data see Tables II 4 and 5.

The equation to the fitted curve is :—

$$\text{Log } y = \log 2{\cdot}0152 - 1{\cdot}0133 \log K$$

In Fig. 18, we have plotted the average area of the holding against the number of cultivators. The points lie almost exactly on a mathematical curve ($\log y = \log 2{\cdot}0152 - 1{\cdot}0133 \log x$). The equation,[7] to the curve enables us to determine the average size of the holding as the number of cultivators increases from 5 to 100 per 100 acres of net sown area :

Table II. 5.

No. of cultivators per 100 acres of net sown area	Average size of the holding Acres.
5	20·27
10	10·04
15	6·661
20	4·976
25	3·969
30	3·299
35	2·822
40	2·465
45	2·187
50	1·966
60	1·635
70	1·398
80	1·221
90	1·084
100	·9696

The figures of the Agricultural Commission relate to years before 1928. Considering the close inverse co-relation between the number of cultivators and the average size of holding and the fact that to-day there are more cultivators in every province per 100 acres of net sown area than before, the average size of the holding in every province must have decreased. If we knew the number of cultivators per 100 acres of net sown area in the Punjab, or any other province, to-day, we could, with a fair degree of accuracy indicate, with the help of the equation, the average size of the holding.

14. Bullocks and Cultivators.

In Fig. 19 we have plotted the number of bullocks against the number of cultivators per 100 acres of net sown area. A

---

[7] **The curve is of the type**

$$y = ax^b,$$

or

$$\log y = \log a + b \log x$$

The two normal equations used in fitting a curve of the type are:

$$\Sigma(\log y) = n \log a + b\,\Sigma(\log x)$$

$$\Sigma(\log y.\log x) = \Sigma(\log x)\log a + b\,\Sigma(\log x)^2$$

$$\Sigma(\log y) = 6{\cdot}974$$

$$\Sigma(\log x \log y) = 8{\cdot}005$$

$$\Sigma(\log x) = 11{\cdot}016$$

$$\Sigma(\log x)^2 = 14{\cdot}008$$

The two equations to be solved as simultaneous equations are :

$$(1)\quad 6{\cdot}974 = 9 \log a + 11{\cdot}016\, b$$

$$(2)\quad 8{\cdot}005 = 11{\cdot}016 \log a + 14{\cdot}008\, b.$$

$$\log y = \log 2{\cdot}0152 - 1{\cdot}0133 \log x$$

straight line trend is revealed ($y = 4{\cdot}205 + 0{\cdot}85x$). The equation enables us to calculate the requirements in regard to bullocks as the number of cultivators increases, assuming that present conditions continue.

Table II. 6.

	Cultivators per 100 acres of net sown area x	Bullocks No. y_0	y_c
Bombay (including Sind)	8·1	10	11·091
Burma	11·5	11	13·980
C.P. and Berar	7·6	15	10·665
Madras	17·3	15	18·900
Punjab	11·2	16	13·725
Bihar and Orissa	26·8	27	26·985
Assam	27·5	27	27·580
U.P.	29·1	29	28·940
Bengal	35·2	36	34·125
	40·0		38·205
	50·0		46·705
	60·0		55·205
	70·0		63·705

More cultivators require more bullocks for cultivation. The number of bullocks therefore increases directly with the number of cultivators.

15. A Vicious Circle.

The Agricultural Commission were of the opinion that India was attempting to maintain an excessive number of cattle.* This inevitably leads to deterioration in the quality of the

---

[8] The two normal equations used in fitting a straight line ($y = a + bx$) are:

$$\Sigma(y) = na + b\Sigma(x)$$
$$\Sigma(xy) = a\Sigma(x) + b\Sigma(x)^2$$
$$\Sigma(y) = 186,\quad \Sigma(x) = 174{\cdot}3,\quad n = 9$$
$$\Sigma(xy) = 4337{\cdot}8 \qquad \Sigma(x)^2 = 4240{\cdot}69$$

The two equations to be solved as simultaneous equations are:

$$(1)\ 186 = 9a + 174{\cdot}3b$$
$$(2)\ 4337{\cdot}4 = 174{\cdot}3a + 1240{\cdot}69b.$$
$$y = 4{\cdot}205 + 0{\cdot}85x$$

* "The number of cattle within a district depends upon, and is regulated by the demand for bullocks. The worse the conditions for rearing cattle are, the greater the numbers kept tend to be. Cows become less fertile, and their calves become undersized and do not satisfy cultivators, who, in the attempt to secure useful bullocks, breed more and more cattle."

(*Report of the Agricultural Commission*, 1928, p. 191) cattle. We are thus moving in a vicious circle. The animals are of a small size and the milk yielding capacity of cows is small. "Full grown Dutch cattle may on the average weigh twice as much as the Indian, and Dutch cows may give anything from five to ten times as much milk as Indian cows."[9] British India had 67 cattle per 100 acres of net sown area, as compared with 38 cattle in Holland. But horses are largely used in agriculture in Holland ; horses are not used for this purpose in India.

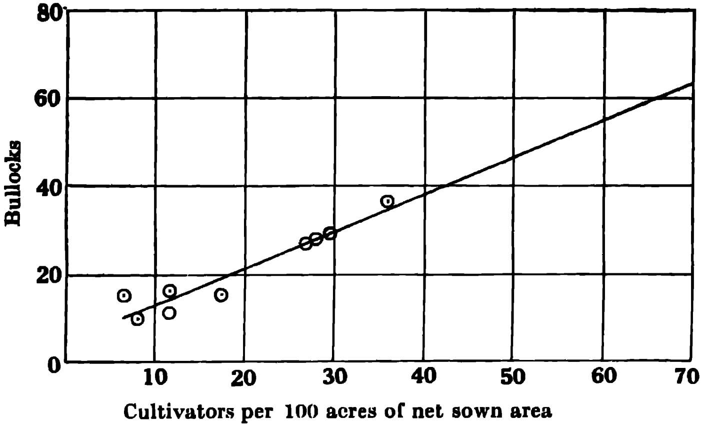


Fig. 19.

Showing the correlation between the number of cultivators and that of bullocks. For data, see Table II. 6.

The equation to the fitted straight line is :

$$y = 4{\cdot}205 + {\cdot}85x$$

The Commission made two recommendations in this connection. Attempt should be made to reduce the number of bullocks required for cultivation. This can be done by checking the sub-division and fragmentation of holdings, increasing the efficiency of the cultivator's tillage implements, and increasing transport facilities by the improvement of roads and other means ; at the same time measures should be adopted to increase the strength of the bullocks themselves. Secondly, dry cows and cows in calf should receive better treatment.

The two important factors in cattle improvement are feeding and breeding, As for better feeding, no large additions to existing grazing areas can be made, but it may be possible to increase the productivity of the land already growing grass.

---

[9] *Report of the Agricultural Commission,* 1928, p. 188.

In regard to breeding, the Commission recommended that the issue of breeding bulls should be limited to selected districts, or that intensive breeding operations should be conducted in selected areas only.

16. Milk and Ghi.

The milk and *ghi* problem is more acute than even before. Municipal corporations of the larger cities might, with advantage, organise co-operative societies for the supply of milk and promote the establishment of large dairy farms. Attempt should also be made to attract capital and business ability to large-scale milk production. Large-scale artificial *ghi* production has attracted both capital and business ability. When the supply of milk increases it may become possible to increase the supply of *ghi*. It is not possible to believe that artificial *ghi* is a perfect substitute for the genuine article. The importance of adequate supplies of milk and milk products in a country where the majority of the people are vegetarian cannot be over-emphasized.

17. Marketing.

We may study the marketing of an important crop, *e.g.*, cotton in the Punjab. Marketing practices and charges differ in different parts of India.

Cotton is a cash crop – it is mainly grown for the market. The marketing is completed by about the end of January.

The crop having been picked, the cultivator is anxious to dispose it off as soon as possible. The room for storage in the village is very limited and there is risk of loss by fire. The grower also wants cash to meet Government and other dues.

The middleman or *arhatiya* is the link between the grower and the buyer. But very often the *arhatiya* buys from the village *bania*. When the village money-lender had advanced money on the condition of getting the crop on maturity, the grower has no initiative in marketing.

When the grower is not in debt, he may take his produce to the market. But many growers prefer to sell their produce locally. The reasons are explained in the Cotton Enquiry Report, Punjab :

(*a*) Taking the produce to the market is inconvenient.

(*b*) Accurate information about market rates is not always available in the village.

(*c*) Prices in the market are settled under cover.

(*d*) The *arhatiyas* act chiefly in the buyer's interest.

(*e*) There are numerous deductions, disputes about which are settled without reference to the seller.

Selling in the village has some advantages. The seller can exert some influence on the buyer. There are no allowances and no disputes. And he can refuse to sell if the terms do not suit him.

With the improvement of means of communication and transportation it may be expected that more growers would be encouraged to take their produce to the market. The establishment of regulated markets will also promote this end. The Agricultural Commission were convinced " that where the cultivator is in a position to dispose of his produce in a market, however limited its scope and badly organised its character, he obtains a much better price for it even when the cost of transport is taken into consideration than, when he disposes of it in his own village."[10]

18. Settling rates under cover.

Mr. Lila Krishan Sehgal in his *Survey of the Marketing of Cotton in the Punjab* gives an interesting account of this practice.

The *arhatiya* gets into touch with the buyer, who is a *dalal*, The 'touch' is physical. A thick cloth is thrown over the hands of the buyer, who conveys his bid by clasping the right hand fingers of the *arhatiya*. The price is expressed in the language of fingers. The process is repeated with each prospective buyer. The buyers are kept ignorant of each other's bid. " They all speak with their hands, as it were."

" The value of each finger depends upon the ruling rate If the rate is less than Rs. 4, each finger indicates a rupee, but if it is higher then the value of each finger rises For instance, if the rate is about Rs. 30 per maund, the offer will be conveyed by two clasps. The first will denote tens, and each finger will represent a rupee. Similarly if a buyer wishes to bid Rs. 43 he will first clasp four fingers to indicate Rs. 40 and then three fingers to represent Rs. 3. In some cases only one clasp is used instead of two, *i.e.*, Rs. 33 may be indicated by a single clasp of three fingers as the tens are taken for granted. After rupees, annas are dealt with in the terms of "paus" (four-anna piece), pice and half-pice coming last."[11]

---

[10] *Report of the Agricultural Commission, 1928*, P. 388.

The system is not free from suspicion and abuse.

The Agricultural Commission did not seek the elimination, root and branch, of the middleman. And it is not true that every ill from which the cultivator suffers is traceable to middlemen. But easier access to the market and less secret methods of settling prices would benefit the grower.

19. Marketing functionaries.

The arhatiya and the *dalal* have been mentioned above. An arhatiya may be *kachcha* or *pakka*. A Kachcha arhatiya is a man with small capital working in a locality as a middleman or an intermediary between the primary producer, or the seller, and the buyer in large, wholesale markets. In some cases kachcha arhatiyas finance the producer and village bania mainly on the condition that the latter sells his goods through them. Pakka arhatiyas are usually firms of some substance dealing in grains, or other primary produce, either as agency houses or on their own account. They also help in the assembling of the produce by financing the operations of the kachcha arhatiya and other small traders. They represent one of the main channels of distribution. As a rule pakka arhatiyas do not buy direct from the primary producer.

The function of the *dalal* or broker is to bring buyers and sellers together. He maintains no establishment and works alone.

The *tola* or weighman weighs the produce ; sometimes the kachcha arhatiya performs the functions of the weighman.

Finally, there are *palledars* who assist in unloading the cart, cleaning and dressing the produce, in weighing, bagging etc., and other functionaries such as waterman, sweeper, cook, etc.

The corresponding marketing charges are :

Arhat (commission) which in some markets is paid jointly by the seller and the buyer and in others by the seller alone. The buyer's share in the case of wheat has been found to range between As. 2½ per cent at Lyallpur and As. 10 at Sargodha

Dalali, brokerage, is often paid by the seller only.

Karda, in the Punjab, is the excess weight deliverable by the seller. It varies from ¼ seers per bag of 2½ maunds of wheat at Fazilka to 1¼ seers at Mandi Baha-ud-Din.

---

[11] *A Survey of the Marketing of Cotton in the Punjab* by Lila Krishan Sehgal, M.A., 1938 (The Minerva Bookshop, Lahore) P. 60.

Palledari is wages paid to labourers, weighing charges and cartage to the buyer's go-down. The weighing charge is generally payable by the seller both in cash and kind. The rate of *Tulai* varies considerably. For other charges, sometimes the buyer but more often the seller is liable.

Dharmada is a payment for charity. It is paid by the seller at the rate of 6 pies to 2 As. per Rs. 100. This payment is in no way directly connected with marketing and is not always utilised for the objects for which it is collected.

Other miscellaneous charges are market fees, bazar chaudhari, *shagirdi* (fee levied in some cases by arhatiya to cover the wages of his apprentice), *batta* (discount or exchange fee), *muddat* (a charge made by the arhatiya to cover interest, since he pays the seller immediately but does not receive payment from the buyer for several days), payments to waterman, chaukidar, cook and sweeper.

There is obviously need for regulating these charges, moderating those which are excessive, legalising those which are fair and reasonable and abolishing others which are unnecessary. In regulated markets only authorised charges are permitted to be levied, and their scale is fixed.

20./ Regulated Markets.

Marketing legislation has been undertaken in several parts of India. The Bombay legislation provides that only authorized charges will be made in market transactions, and it prohibits the establishment of unauthorised markets within a prescribed distance of markets established by law. In the Punjab, the Agricultural Produce Markets Act was passed in 1938. Under this Act market committees can be established by Government in every notified market area.

When an area has been declared a notified market area, no person shall, within the notified market area, set up any place for the purchase or sale of the notified agricultural produce except under a licence granted by Government.

Licenses shall be granted to brokers, weighmen, measurers, surveyors, warehousemen and others who use the market.

Every market will be administered by a market committee. Two-thirds of the members of the market committee will be selected by growers in the district in which the notified area is situated. Government may appoint not more than three persons by office.

The market committee will hold office for three years. It is empowered to levy fees on agricultural produce bought and sold by licensees.

All income accruing to the committee will be placed in a fund called Market Committee Fund. This will be utilized chiefly for the following objects: (1) maintenance and improvement of the market, (2) repair and construction of market buildings, (3) provision and maintenance of weights and measures, (4) collection and dissemination of information regarding marketing and crop statistics, and (5) provision of comforts for those who use the market.

21. Rural Unemployment.

Generally speaking there is no permanent unemployment among the agricultural classes, and the period of time during which the cultivator is idle in the course of a year is often exaggerated. When the present writer referred to the long enforced idleness of cultivators in a Kisan school, his statement was hotly contested by the class. In the irrigated tracts of the Punjab (more than half of the total area of the province is irrigated), the cultivator is kept busy throughout the year, except perhaps for a month or two in the winter. In the *barani* tracts, however, there is a problem of seasonal unemployment.

In several parts of India, when there is no work for the cultivator on his own holding, he seeks employment in factory industries even in distant towns or in agriculture elsewhere. Very often he is accompanied by his family. Every year, there are considerable movements of the population from North Bihar and Orissa to Bengal and to Calcutta; and from the upland districts of the Madras presidency to the Kistna and Godavari deltas. The seasonal migration to towns, it may be hoped, helps to broaden the outlook of the villagers. But there is also the risk of disease from the crowded and insanitary conditions of town life. In any case the villager returns home with a little cash, which is good for him and his family.

Organised industries in rural areas, *e.g.*, cotton ginning and pressing, rice and sugar mills, also provide seasonal employment to unoccupied village labour.

22. Subsidiary Occupations.

The cultivator may add to his income by taking up a subsidiary occupation in his spare time. But this is no means of relieving the heavy pressure of population on the soil. The Agricultural Commission have made valuable suggestions for the improvement of village industries: new ideas for cottage workers, improved marketing facilities, and careful and thorough instruction in modern processes. "But even with the aid of new ideas and assistance in training and marketing, the contribution which rural industries can make in reducing the heavy pressure on the land is infinitesimal, and in the nature of things they cannot, as a rule, hope for ever to survive the increasing competition of organised machinery...To put it briefly, the possibilities of improving the conditions of the rural population by the establishment of rural industries are extremely limited.'"[12]

Less importance would be attached to the development of cottage industries as a means of India's economic regeneration if their development were not regarded as an article of political faith. There is not the remotest connection between cottage industries and political independence.

Examples of subsidiary occupations are cotton spinning and weaving, bee keeping, sericulture, lac culture, poultry breeding, sheep rearing, cattle breeding, dairy farming, basket weaving, and fruit farming.

23. Rural Self-sufficiency.

Family budgets of a certain number of tenant cultivators in the Lyallpur district of the Punjab enable us to form some idea of the dependence of village people on goods and services provided for them by the external world. To the extent of more than half of their total expenditure village people are self-reliant and self-sufficient. The more important goods and services for which payments have to be made to the outside world are: medicines, kerosene oil, railway travelling, education (negligible), and amusements and luxuries (festivals, fairs, cinema, drinks, tobacco etc).

Among articles of food, salt, sugar, rice, meat and pulses may be mentioned, and among articles of clothing, there is the important item of cotton cloth. The campaign to make village people more self-reliant and self-sufficient principally means that they should use more *khaddar*.

With economic progress the village may be expected to become more and more closely linked with the town. The isolation of village and village life is already a thing of the past.

24. Yield of Crops.

The yield of crops fluctuates from year to year. An idea of yields of the principal crops in British India and certain States may be formed from the figures for the year 1939-40, which was on the whole a good year.

---

[12] *Report of the Agricultural Commission, 1928*, p 188.

Table II. 7.

Estimated yield of :	Unit	1939-40
Rice (cleaned),... ..	Million tons	25·7
Wheat................	,,	10·8
Tea..........	Million lbs.	452·6
Cotton..............	Million bales of 400 lbs. each	5·8
Jute	,,	9·7
Linseed	Thousand tons	466
Rape and mustard	,,	1,116
Sesamum	,,	415
Groundnut	,,	3,165
Castor seed	,,	97
Coffee..............	Million lbs.	34·8
Rubber.........	,,	31·4

Taking seven principal food grains (rice, wheat, jawar, bajra, barley, gram, and ragi), the aggregate yield between 1935-36 and 1939-40 fluctuated as shown below:—[13]

Table II. 8

Average yield of 7 principal food grains

	Thousand tons.
1935-36	49,885
1936-37	55,481
1937-38	54,324
1938-39	49,584
1939-40	53,061

It would be interesting to know how much the total yield of food-crops increased between 1921 and 1941. Considering that the area under food crops remained practically stationary, it is extremely improbable that food-supply kept pace with the rapid increase of numbers. But no exact comparison is possible for want of reliable data.

The Famine Commission of 1898 estimated India's surplus of food grains at the close of the 19th century at 9·53 million tons. Now during the years 1935-36 to 1941-42 there was no net export but net import of food-grains and food-grain products varying between 629,000 tons in 1937-38 and 2,221,000 tons in 1939-40.[14] It is probable that in the years before the war no surplus of food grain existed, and this would account for the breakdown of our agricultural economy under the strain of war—a subject which will be discussed later.

---

[13] *Report of the Food Grains Policy Committee*, (1943) P. 8.

[14] *Ibid*, P. 8.

25. Need for Reorganisation of Agricultural Statistics.

The terrible experience of Bengal during 1943 suggests a thorough examination of the whole food position at an early date, and a complete overhauling of agricultural statistics.

Our statistics of yield are defective and incomplete. Information is entirely lacking for about 44 per cent of the total area covered by the Indian States, and no information about the area under or the yield of food grains is available for the tribal areas of the N.-W.F.P. and British Baluchistan.

26. Land Revenue and Agricultural Statistics.

Agricultural statistics in India are primarily collected as an aid to administration. The process of land revenue settlement assumes a cadastral survey, showing field to field details, as well as roads, wells, tanks, groves, inhabited sites and other features of the village area. Village maps are prepared showing persons holding land (each person being classed as tenant, co-sharing owner etc.) and the measured and mapped fields. Each field, with details of its area, soil and crop is entered in a permanent *khasra* or field index. A huge amount of statistical information is required in connection with land revenue assessment and in the provinces or areas under temporary settlement, this information is diligently and systematically collected. But, from the administrative point of view, this information is not required for areas under permanent settlement. For areas under temporary settlement the area statistics are fairly reliable, for a trained village revenue staff exists in such areas. In areas in which the system of permanent settlement prevails, the average figures under the crops are based on reports by no higher authority than the village chowkidar. In British India 62 per cent of net area sown is temporarily settled under ryotwari and zamindari tenures, and 21 per cent is permanently settled; the rest is subject to different forms of concessional tenures, "or is accounted for by the lack of statistics."[15]

27. How yields are estimated.

Three factors are taken into account in estimating yields. The first is the area under crops, to which we have referred above; the second is the standard yield, and the third is the condition estimate.

The Department of Agriculture in every province maintains a statement of the normal or average yield per acre of land of average quality, to which alterations are made, if necessary, on the basis of crop-cutting experiments. "Such experiments are, however, rarely, planned scientifically to give a reliable guide."[16] Messrs. Bowley and Robertson, who sometimes ago (1934) drew up a scheme for an economic census of India, were of the opinion that in most cases the standard yields were based on estimates of old date and were of 'doubtful validity'.[17]

---

[15] ***Report of the Food Grains Policy Committee*, 1943, P. 10.**

The question had engaged the attention of the Board of Agriculture in 1919 to 1924. The Board thought that the standard out-turn per acre could not be calculated from the figures of total production on account of their unreliability, and that crop-cutting experiments must remain the basis of such standards. These experiments are entirely carried out by the subordinate revenue staff, and the time for such experiments coincides with the busiest season of the year for the Agricultural Department. Additional and specially trained staff is required for the purpose.

Further, 'average' crops are at present selected by the eye for crop-cutting experiments. This is indefensible in statistical theory. But the correct method of selecting fields mechanically, so as to give a statistically random distribution[18] would give satisfactory results only if a sufficient number of fields can be thus selected within a definite area.

28. The condition estimate.

The area and standard yield having been determined, the next task in estimating out turn is to relate the crop reported on to the standard yield per acre. This is done by means of a visual estimate, which is expressed in annas. A certain number of annas are taken to represent the normal out-turn, and the out-turn of the year of report is so many annas higher or lower than the normal. But in some tracts 16 As. express a bumper crop while in others the same term expresses a normal crop. Thus the anna estimate of one tract is not always comparable with that of another tract. In Burma the American notation of 100 points is employed to denote a normal crop, and the estimated out-turn of the year of report is stated as a percentage of that crop. This is better than the annas estimate, but the latter has been retained in India as village officers are accustomed to it. In published forecasts the American notation is used.

---

[16] *Ibid.* P 10

[17] *A Scheme for the Economic Census of India. Report by Dr. Bowley and D. H Robertson* 1934 P. 38.

* Given reliable figures of total production and area, the average yield may be found by dividing the total production by the area to which it relates

[18] 'The Fundamental condition for obtaining a total or average based on a sample enquiry is that *every unit in the aggregate shall have an equal chance of being included* (Messrs Bowley and Robertson, loc. cit. P 18. Suppose in a given area there are 1 000 fields, of which 20 are to be selected. Then from a list of numbered fields, take every 50th, begining with the first That would give a 'random' sample.

The estimate of out-turn is found by multiplying together the area, standard out-turn and the percentage estimate. If the area is 100,000 acres, the standard out-turn 500 lbs per acre, and the percentage estimate 80, the quantitative estimate is:

$$100{,}000 \times 500 \times 80/100 = 40{,}000{,}000 \text{ lbs.}$$

The anna estimate is primarily made by *patwaris* in a *tahsil*. The tahsildar takes some sort of average of the patwaris' estimates and reports a single result, such as 12 annas, for the tahsil to the District Officer. This Officer modifies the figure according to his knowledge or discretion and reports an average for the district as a whole. He does not attempt to take the arithmetical average of the figures supplied to him but simply chooses that which is given most frequently (technically the ('mode').[19] Or he may ignore the figures and give a number on his own judgment.

[19] The 'mode' is the point of maximum density. Suppose in a house examination the following 'marks' are awarded to a class.

Marks	No. of students (frequency)
45	1
50	5
55	15
60	25
65	30
70	25
75	15
80	5
85	1
	122

The 'modal' marks are 65. This is an example of a symmetrical frequency distribution. The 'mode' here means the largest number of students obtaining a certain number of marks.

On the basis of district figures, an average figure for the whole province is chosen.

It would seem that the possibility of wide variation between actual and estimated production of crops for India as a whole cannot be excluded, unless tahsils, district and provincial averages are accurate.

Yields cannot be exactly determined for it is not possible to count every maund of the produce grown. They must always be estimated, and a margin for error allowed. The accurate estimation of yields is important, but difficult, and estimated yields must be treated with a certain amount of reserve. A German example is interesting. In the year 1917 the yield of potatoes in that country was thus estimated in millions of tons: according to the returns from potato growers, 24; municipal sources, 28; Government department dealing with potatoes, 34; according to the estimate of 6500 officials concerned with crop estimates, 40; and according to the estimate of other experts, 50. The highest estimate was more than twice as high as the lowest. "With such data" remarks Zizek "had the war economy to operate."[20] Our own war economy is not operating with more reliable data.

29. Irrigation.

The following statement shows details of area under irrigation in British India :—

Table II. 9.

	1939-40 Thousand acres
Total sown area, including area sown more than once.	244, 575
Area irrigated by :—	
Government canals	25,125
Private canals	3,886
Tanks	5,866
Wells	13,492
Other sources	6,575
Total.	54,945.

The Punjab has the largest area irrigated by Government canals—11·4 million acres. The United Provinces have the largest area irrigated by wells, 5·8 million acres. Tanks are most important in Madras, and of less importance in Bihar and Bengal.

---

[20] ***Grunderiss der Statistik*** **by Franz Zizek. 2nd. Ed. 1923 (Munich and Leipzig, P. 319.**

The Report of the Agricultural Commission draws attention to the decrease in the area irrigated from wells in the Punjab :[21]

	Acres
1868-69	4,612,000
1918-19	3,829,000
1926-27	3,484,000

The decline was due to the extension of canal irrigation to tracts formerly dependent on wells. The cost of irrigation from canals, which is flow irrigation, is a fraction of that from wells (lift irrigation). The figures are about Rs. 3/8 per acre and Rs. 22 per acre respectively[22].

The area irrigated from wells in the Punjab in 1939-40 is shown as 4,721,922 or greater than that in 1868-69[22].

The effect of canal irrigation in increasing density of population has been explained before. Canals are also a source of profit to Government.

The net revenue due to irrigation (deducting working expenses and interest on capital) exceeded 3½ crores in 1939-40 in the Punjab.

30. Tube-well Irrigation.

This is a recent development. The Government of the United Provinces promoted tube well irrigation by the grant of subsidies, to which exception was taken by the Agricultural Commission. Tube-well irrigation is never cheap as compared with canal irrigation and it does not pay unless a valuable crop such as sugarcane, potatoes or tobacco is grown.

Responsibility assumed by Government for the development of tube-well irrigation, according to the Agricultural Commission, should be limited to the supply of economic data and of expert advice, financial help on the taccavi system (loans recoverable by instalments) and to placing at the disposal of the landholder, on payment of a reasonable fee, the boring equipment and skilled labour.

[21] *Report of the Agricultural Commission*, 1928, P. 343 *n*.
[22] *Ibid*. p. 343, *n*.
[22] *Statistical Abstract for British India*, 1939-40, P. 551.

31. Distribution of Canal Water.

There is an enormous waste of canal water by the cultivator in the canal irrigated tracts. The amount of excess water applied to crops such as wheat in Northern India is estimated at from 30 to 50 per cent. This waste is largely due to the practice of charging for water, not according to the amount used by the cultivator, but according to the area irrigated, or, as in the Punjab, by the area matured. But this is not the whole explanation. "No small proportion of the wastage is due to uncertainty of supply[23]. The well is always at the disposal of the cultivator ; with canal irrigation he often does not know when the next watering will take place and therefore applies water in large quantities when he gets it. Over-irrigation damages the soil. The sale of water by volume would cause the cultivator to be more economical in its use, but it has not so far been tried.

32. The Water Rates.

The Punjab Government makes an annual profit of over 14% on capital invested in canals. This may be compared with 4 or 5 per cent profit of the N.W.R. on commercial lines only. In 1932-33 the N.W.R. showed a percentage profit of 2·8 only as compared with 12·5 in the case of Punjab canals.

The demand that water rates should be levied according to the cost of service principle is not acceptable to Government.

The Indian Taxation Enquiry Committee of 1924-25 discussed the principle on which water-rates should be based. Their report says :

> "The Government, by making irrigation available to a particular piece of land, especially if it guarantees to continue to do so, gives a potential increase both to the annual and to the capital value of the land There would of course be no actual increase in the latter if the whole of the increase in the annual value were taken in the shape of payment for water. But in actual practice what is taken is generally quite a small fraction of this increase. Consequently, the result of the action of the Government in guaranteeing the supply of water is to give a large unearned increment to the owner of the land, whether he is a cultivator or a rent receiver, and it is a generally accepted theory of taxation that there is no source of income from which a considerable share may be taken for purposes of the State so appropriately as from an unearned increment or windfall of this kind (para 131).

The minimum charge for water, except in special cases, would be equal to the cost of service, that is the cost of maintaining the irrigation works plus interest on capital cost. The maximum charge may be so fixed as to appropriate the whole of the increase in the return from the land resulting from the use of canal water. "The normal," the Taxation Enquiry Committee recommended, "should be a moderate share of the value of the water to the cultivator" (p. 112).

---

[23] *Report of the Agricultural Commission*, p. 335.

Water rates are not necessarily reduced when agricultural prices fall ; a moderate share of the value of water to the cultivator became an oppressive tax during the trade depression.

The Government view of water rates in the Punjab is explained in a note prefixed to the report of the *Abiana* Committee. This Committee, composed of official and non-official members of the Punjab Council, was appointed in July 1933. The non official members of the Committee recommended "that a separate budget should be prepared and presented to the Council and the commitments of the Department of Irrigation to contribute to the general finances of the Province should be restricted in their extent and regulated on some intelligible basis, as is done in the case of the railway budget in the Central Government." The Government, of course, cannot entertain such a proposal.

The proposal, we are told in the Government review of the Report, "is based on a fundamental misconception, that the irrigation works of the Province were created and are maintained for the benefit of a particular class. This is not so." The irrigation works of the Province were created for the benefit of the whole population, and their construction was financed partly out of surpluses from the revenues of the Province and partly out of borrowed money advanced on the security of the general revenues, as well as from the sale of lands irrigated by the Canals Further: 'The water in the Punjab rivers and the Crown lands irrigated by them are the property of the State while the users of canal water are not the whole body of the citizens of the Province but a fortunate section comprising only about 34 per cent of the total population. If, therefore, a section of the people benefit directly by the use of that water, the rest of the population is equally entitled to benefit indirectly. The analogy of the Railways of India, which are used equally by the whole population, is not an exact one. The suggestion that after deducting a certain fixed return for the benefit of the State generally the remaining profits from a particular form of taxation should be expended for the benefit of the particular section of the population which pays the tax is not only indefensible in theory, but would in practice be unworkable. It could be used with equal justice by motorists, by users of excisable liquor or by those who provide the income from stamp duties of various kinds.........The *reductio ad absurdum* of the proposal of the non-official members would be that each citizen could only receive that share of the benefits provided by State which was represented by his actual contribution to the general revenues" (para 7).

The charge for water is frankly levied as a tax. It is determined with reference to the financial needs of the province.

33. Water-logging due to Canal Irrigation.

The term signifies a rise in the level of sub-soil water which renders land unfit for cultivation.

The approach of the danger is marked by certain well-known stages. At first, for one or two years, *barani* crops are unusually successful and there is a spontaneous growth of a rich crop of *maina*. In the third year patches of *kallar* (salts) begin to appear on the affected fields, and seed does not germinate on these patches. Yields begin to diminish and the patches extend until they cover the whole field. Depressions in close proximity to the canal remain permanently damp and have water of a rusty colour. The spring level rises and comes close up to the surface of the land. Houses in the *abadi* begin to crumble to dust and eventually collapse. An obonoxious odour is emitted by *abadies*, and drinking water tastes raw.

Water-logging is due to the rise in the spring level. When it has risen so much that it is only within a short distance of the ground surface, water is drawn up by capillary attraction, as a piece of blotting paper, whose edge is dipped in water, sucks up water. The affected land then is covered with *kallar* and finally it is turned into a swamp.

If a well is sunk in any place, water is found at a certain depth. It may be nearer the surface in one place and at a greater distance in another. Suppose water is found at a distance 20 feet from the ground surface. In technical language it will be said that the spring level, or the water-table, is 20 feet below the surface. If the water were pumped out the well would be found to be full again after a certain time.

More exactly, the spring level may be defined as the level up to which the underground soil is completely saturated with water. The terms spring level and water-table are often used interchangeably, but the "spring level" refers to a particular locality, say a village, while the water-table refers to a wider-area.

The action of canals on the water-table is both direct and indirect. Indirectly, when a canal has been so constructed that it intersects all the drainage lines of a tract, like the old Western Jumna Canal, by obstructing the surface drainage it will cause rain or flood water to be held up, and some of this water must, passing through the sub-soil, be added to the water-table. This also applies to irrigation channels and zamindars' embankments which obstruct the natural drainage of a tract.

As for the direct action of canals, if nothing intervened between the bed of a canal and the spring level, water percolating from the canal would fall vertically until it reached the spring level. But the whole space between the spring level and the canal bed is filled with soil. The soil nearest the sides and the bed of the canal first gets moist, and percolation goes on spreading on all sides until the spring level is reached. The spring level then begins to rise. The water added to the spring level would tend to flow away, but when the inflow of water owing to percolation exceeds the sub-soil outflow, the spring level continues to rise until equilibrium is restored by its rising above the ground level. When this happens the whole of the area surrounding a canal becomes water-logged.

It has been estimated that of the water taken in at the head-works of the Punjab canals, about one-third is lost in the main canals and branches. Of the remaining water, that is water in the distributaries and water courses, and that supplied to the fields for actual irrigation, also one-third percolates to *the soil to raise the spring level.*

Any rise in the water-table is not disadvantageous. In fact, among the indirect benefits of irrigation, mentioned by the Irrigation Commission of 1901-03, was "the effect of irrigation and of large water storage works in increasing the humidity of the air, and in raising the level of the underground water supply." The rise in the level of sub-soil water is advantageous as it makes well-sinking and the working of wells easier. It is also good for the crops as it increases the moisture of the soil. An expert witness stated before the Agricultural Commission that if the sub-soil water can be kept at a certain depth below the ground level, 15, 18 or 20 feet, that water-table is a gold mine * The water-table ceases to be a gold mine when it rises to within a short distance from the ground surface, say 3 or 4 feet. It then becomes a grave source of danger to public health as well as to cultivation. In the interests of health the water-table must not be allowed to rise to a distance of 8 to 15 feet from the ground surface.

**Report of the Agricultural Commission*, Vol. VII, p. 457.

About a century ago water-logging, due to faulty alignment of the Western Jumna canal and over-irrigation, caused heavy loss of life among men and cattle in Karnal. In Amritsar, water-logging was responsible for a severe epidemic of malaria in which mortality "reached the appalling figure of a plague epidemic" in 1908.

The remedies against water-logging are the following :—

1. Improving the natural drainage of the country. Canals must not be so constructed as to close or obstruct the natural drainage of a tract.

2. Water proofing of the bed and sides of a canal (*e.g.*, the Gang canal, which takes out from the Sutlej at Ferozepore and carries water to the Bikaner State. Its total length is about 82 miles). This is a costly remedy. For financial and other reasons the water-proofing of the major Punjab canals is unthinkable.

3. Replacing canal irrigation by irrigation from wells. But, as we have seen, well-irrigation is far more expensive.

4. Pumping from sub-soil. This is the most effective means of lowering the spring level where it has risen unduly.

5. Construction of seepage canals, along side the canal carrying water, into which the water percolating from the canal is drawn.

At one time a very serious view was taken of the evil, but now it is under control. The area rendered unfit for use by water logging in the Punjab is about 0·25 per cent of the total irrigated area. While steps must be taken to arrest water-logging, it is urged that future irrigation projects should not be withheld on this account.

CHAPTER III

MANUFACTURING INDUSTRIES

1. Sinister meaning of growth and progress of Indian Industry.

In this chapter we shall briefly review the growth and progress of Indian manufacturing industries before the war. It has a sinister meaning. The development of organised industries in India has increased the pressure of population on the soil.

Changes in classification make it difficult to compare the results of the different censuses of occupation. For example, the return for 1931 was of workers alone, while at the preceding censuses, an attemp was made to determine the percentage of the population supported by different occupations.

Between 1891 and 1901 the proportion of population dependent on agriculture increased, but the Census Comissioner for 1901 did not think that the increase in the number of persons dependent on agriculture indicated "a greater dependence on the land due to the abandonment of weaving and other indigenous industries."[1]

Between 1901 and 1911 industry further declined while the number of landlords and cultivators increased by 13 per cent. (a rate of growth double that of the general population). There were changes in classification, but it appeared to the Census Commissioner that the artisan classes were showing "a growing tendency to abandon their traditional occupations in favour of agriculture".[2]

The same process continued during 1911-21. The rate of increase of agriculturists (1·8 per cent) was again faster than the general growth of population (1·1 %), but the population supported by industry registered a decline from 35·32 millions in 1911 to 33·17 millions in 1921. The proportion of population supported by industry in 1921 was 10·49% as compared with 11·49 in 1911.

---

[1] ***Census of India* 1901, vol I, Part I, P. 207, para. 339.**
[2] ***Census of India* 1911, vol I, Part I, P. 418 para. 530**

The following comparative figures of workers in Industry are taken from the Census Report for 1931:[3]

	Actual workers, Millions			Percentage variation
	1931	1921	1911	1921-31
Industry	15·35	15·71	17·51	—2·3

The census figures for 1931 show a decrease also in the number of cultivators, but this is due to changes in classification; in fact agriculturists increased. "It seems likely, therefore," says the Census Commissioner, "that the increase of agriculturists is resulting in the extension of cultivation to areas which yield a low economic return".[4]

Industrialisation in other countries has reduced not only the proportion of agriculturists, but also their absolute number. For example, the total number of persons dependent on agriculture, fishing and hunting in Germany decreased trom 19·2 millions in 1882 to 17·7 millions in 1907—from 42·5 per cent of the total population to 28·6%. Industrialisation in India has just the opposite effect, Why ?

2. Labour in Organised Industry.

Most of our industrial workers are cottage workers. Labour in organised industries is a negligible proportion of the total population.

Average daily number of persons employed in :—	Year 1932. British India
1. Government and Local Fund factories	132,446
2. All other factories	
A. Perennial	1,329,248
A. Seasonal	289,443
Total	1,751,137

The estimated population of British India in the 1939 (mid-year) was 278·31 millions. Labour in organised industries was ·063 per cent of the total population.

An industrial proletariat in the Marxian sense does not exist in India.

---

[3] *Census of India,* 1931, Vol. I, P. 318.

[4] *Ibid.* P. 289.

Where most of the industrial workers are cottage workers, who are adversely affected by machine competition, the growth and progress of organized industry is accompanied by the progressive ruralisation of the country.

Stalin has said : "Not every development of industry constitutes industrialisation. The essential basis of industrialisation consists in the development of heavy industry (fuel, metal etc.,), the building up of means of production and of our own engineering industry." [5]

The development of Indian industry is not industrialisation. Ws have almost entirely neglected the production of technical equipment, or heavy industry ; our industrial advance is dependent on imported machines Under such conditions the use of machinery creates employment where the machines were made and unemployment where the machines are used. Russian experience before the last world war was similar. Russia used to import machines from Germany.

3. Cottage Industries.

In the absence of returns of occupation for 1941 we may consider the figures for 1931 .

Earners and Working dependents as percentage of total number of workers.

	Exploitation of animals and vegetation	Industry
India	67·1	10·0
Assam	83·8	7 5
Bengal	68·3	8·8
Bihar and Orissa	77·6	6·6
Bombay	65·9	11·9
Burma	69·4	10·7
C.P. and Berar	80·6	7·9
Madras	48·6	8·8
N.W.F.P.	61·7	12·6
Punjab	60·5	18·8
U. P.	75·4	11·2

The Punjab shows the highest proportion under industry —this only means that we have more cottage workers. The number of factory workers in the Punjab in 1939 is shown below :

---

[5] *The Soviet Comes of Age*, a joint work. (*William Hodge, London*, (1988)), P. 44.

Average daily number of workers employed in the Punjab in

1.	**Government and Local Fund factories**	**22,402**
2.	**All other factories**	
	A. Perennial	**33,267**
	B. Seasonal	**22,693**
	Total	**78,302**

The same total for Bombay is 466,040 and for Bengal 571,539.

Cottage workers are not neglected by Government. Every province has an Industries Department, and this Department is mainly concerned with hand-workers. The provincial expenditure on industries has more than doubled since 1920.

The Department of Industry maintains industrial schools where a great variety of arts and crafts are taught. Some examples are : carpentry, blacksmithy, weaving, fitter and turner course, foundry course, metal work; sports gear ; cane-work, mechanical engineering, engine driving, electrical work, shoe-making.

In addition to industrial schools special institutions are also maintained, *e.g.*, in the Punjab : The Mayo School of Arts, Lahore; Institute of Dyeing and Calico Printing, Shahdara; Demonstration Weaving Factory, Shahdara ; Tanning Institute, Jullunder.

The Industries Department organises travelling demonstration parties with the object of bringing new implements to the notice of hand-workers scattered all over a province. To a limited extent the Industries Department assists industrialists with loans and in a still more restricted sense carries on industrial research.

Political leaders, *e.g.* Mahatma Gandhi, are also interested in the revival of cottage industries. One may mention in this connection the All-India Spinners Association, and the Village Industries Association founded in 1934. Probably taking their cue from Mahatma Gandhi the Government of India, for the first time, provided 113 lakhs in the budget for 1935-36 for rural reconstruction. The British Fascist leader, Sir Oswald Mosley, is a supporter of village industries for India. In his *Greater Britain* (new ed. 1934) he writes : "We have failed to promote the development of Indian agriculture and village industry in place of the herding together of the Indian masses in the new industrial cities, the chief object of which is to undercut Lancashire goods for the benefit of inter-national capital."[6]

In spite of all that is being done to revive them cottage industries, whose products compete with machine-made goods, are doomed. Such has been their fate in other countries, and a similar fate awaits them in India. They are being destroyed not only by imported goods, but by Indian machine competition. This is the meaning of the steady decline in the proportion of workers engaged in industry. An account of cottage industries in certain provinces, based on provincial census reports for 1931 and other sources, is given in Appendix B.

4. Mineral Production.

The average number of persons employed daily in the production of minerals from mines in India (for which reliable returns of labour statistics are available) was 413,458 in 1938. The chief minerals produced are chromate, coal, copper ore and matte, diamonds, gold, iron, magnesite, manganese ore, mica, manzite, zircon and elmenite, petroleum, ruby, sapphire and spinel, salt, saltpetre, and tin and tungsten concentrates.

Including Burma, the annual output of petroleum exceeded 300 million gallons. Without Burma, British India produces a negligible quantity, 87 million gallons in 1938, of which the Punjab accounts for 21 million gallons and Assam for the rest. 321,115 ounces of gold were mined in Mysore (Kolar gold fields) in 1938 ; the total for British India for the same year is 321,138 oz. (362,869 oz. in 1929).

The production of minerals suffered a check during the years of depression, when prices fell heavily. Recovery set in after 1937.

A favourable view is taken of India's mineral resources. As far back as 300 B.C. Megasthenes wrote that India "has under-ground numerous veins of all sorts of metals, for it contains much gold and silver and copper and iron in no small quantity, and even tin and other metals which are employed in making articles of use and ornament as well as the implements and accoutrements of War."[*]

---

[6] P. 142.

[*] "*Industrial Handbook,*" published by *the Indian Munitions Board*, p. 128.

Writing in 1881 in the introduction to his "*Economic Geology of India,*" V. Ball thus commented on the passage quoted above :—

> **"To many it may appear that it was a fanciful and fabulous India, very different from the country as it is now known to us. To such the facts set forth in this work not only as to the extent of the mineral resources, but also as to the ancient mining operations, will come almost as a revelation.**
>
> **"Speaking generally, the value of the majority of the deposits is relative to external circumstances. Were India wholly isolated from the rest of the world, or were her mineral production protected from competition, there cannot be the least doubt that she would be able, from within her own boundaries, to supply very nearly all the requirements, in so far as the mineral world is concerned, of a highly civilized community. But the consumer would probably have to pay more than he does at the present day."**

About 1881, however, no important metallurgical industries, working on modern lines, existed in India. It was in 1885 that the Mysore Gold Company was founded. The Barker Iron Works were, indeed, established in 1875, but it was not until 1899 that the Company succeeded in producing pig iron at a profit. Thus, at the beginning of the present century, the only successful metallurgical works were the gold mining and reduction plants of Kolar and the Barker Iron Works.

Considerable progress has, however, been made during the past 25 years.

5. Coal.

The industry has grown rapidly since 1897, in which year production amounted to a little over 4 million tons. This may be compared with the peak production of 25 million tons in 1937 and the record output of 29 million tons in 1940.

The Coal Grading Board was constituted in 1925 and commenced operations in 1926, The object of this Board is to ensure that only good-sized coal is exported. The Coal Grading Act provides for the grading of seams of coal and for the grant of certificates for coal intended for export.

The varying fortunes of the industry between 1928 and 1941 may be studied with the help of the chain index. The chain index is the device employed in the *Review of the Trade of India* for the study of industrial profits. It is easily constructed.

Table III. 1.

Coal Industry. Chain Index.

1	2	3	4	5	6
Year	Number of companies	Profit (Rs. 1,000)	Profits, same companies preceding year (Rs. 1,000)	Link Relatives	Chain index 1928 = 100
1928	58	8047	—	100·00	100·00
1929	58	7916	8047	98·37	98·37
1930	58	9824	7916	124·10	122·08
1931	62	7716	10333	74·67	91·15
1932	63	6359	7725	82·32	75·03
1933	64	5098	6345	80·35	60·29
1934	64	5048	5098	99·02	59·70
1935	62	5429	5079	106·89	63·81
1936	61	5305	5416	97·95	62·50
1937	56	6071	5288	114·81	71·76
1938	54	12277	6186	198·46	142·41
1939	55	11990	12177	97 73	130·18
1940	55	11993	11900	100·78	140·27
1941	55	9829	11993	81·96	114 97

Source : *Review of the Trade of India*, 1941-42, p. 62.

The number of companies varies from year to year, and therefore a fixed base is unsuitable. Col. 3 of Table III. 1 shows the profit earned by the number of companies given in col 2, and col. 4 shows the profits of the same companies during the preceding year. Taking 1928 = 100, 58 companies earned a profit of Rs. 79,16,000 in 1929, their profit in 1928 amounting to Rs. 80,47,000. Taking profit in 1928 = 100, profit in 1929 is found to be 98·37. This is the 'link relative' for 1929. The link relative for 1930 is ;

$$\frac{9824 \times 100}{7916} = 124{\cdot}10$$

and so on for the other link relatives ; profits earned in a given year are expressed as a percentage of profits earned in the preceding year.

The next step is the inter-linking of the link relatives. The chain index for 1929 = 100·00 × 98·37 = 98 37

„ 1930 = 100 00 × 98·37 × 124·10 = 122·08

„ 1931 = 100·00 × 98·37 × 124·10 × 74·67 = 91·15.

Since the link relatives are given in percentage form, before multiplying the decimal point is shifted two places to the left, and, in the product, two places to the right again.

Thus, 91·15 × 82·32 (ignoring the percentage form)

= ·9115 × 8232 = ·7503 = 75·03

in percentage form. This is the chain index for 1932.

The chain index shows the profitableness of the industry in each year as compared with the preceding year.

It is seen that there was a severe set-back during the years of the trade depression, the index falling to 59·7 in 1934 (base 1928). This was due to over-production and internal competition. Recovery began in the year 1937. The industry was in a very prosperous condition in 1940. The heavy fall in profits in 1941 was due to the high level of production attained in 1940, which was maintained in 1941. It appears that colliery owners "did not correctly assess the potentialities of the trade; and the severe internal competition resulted in under bidding".[7] Costs rose on account of dearness allowance paid to labour but the rise in prices was insignificant. The combined demand for coal on the part of Government departments and public utility concerns (electric supply companies and the railways) accounts for a large proportion of the sales[8], and the scope for the rise of prices is therefore limited.

6. Industrial Profits, 1928-41.

Before describing the progress of individual manufacturing industries we may review industrial conditions as a whole during 1928-41.

Table III. 2.

Profits and Chain Index Table for all Industries.

Year	No. of Companies	Profits Rs. 1,000	Profits same Companies preceding year	Chain index (Base 1928 = 100)
1928	306	125223	..	100·0
29	308	97619	125223	78·0
30	310	59387	98240	47·1
31	317	35811	60698	27·8
32	320	44834	36018	34·6
33	324	57321	44891	44·2
34	327	81832	57756	62·6
35	335	92502	83652	69·2
36	332	84273	92419	63·1
37	334	83511	86286	61·1
38	329	93819	84083	68·1
39	340	117158	110152	72·4
40	342	160998	117003	99·6
41	344	222777	160924	137·8

Source : *Review of the Trade of India*, 1941-42, Pp. 40-41.

Review of the Trade of India, 1941-42, p. 62.

[8] It was stated by Sir Arthur Griffin, Manager of the N. W. R, in a recent broadcast talk that the railways accounted for 40 per cent of the output of coal.

The link relatives, essential for constructing the chain index, are not shown in the table. But they can be easily calculated. The reader knows the method.

Industrial profits sank to their lowest level in 1931, after which a gradual improvement began. There was a set-back in 1936-37. No comment here is necessary on improved profit conditions due to the war.

7. Government Policy.

Political relations between India and England explain Government's agricultural as well as industrial policy. As we have seen, steps were taken very early to improve Indian agriculture. Government's attitude towards industry was that of indifference, if not of definite hostility.

The famine of 1876-78 caused heavy mortality throughout India. The experiences of this famine were examined by the Famine Commission of 1880. In para. 103 of their report, the Famine Commission say :

> "A main cause of the disastrous consequences of Indian famines, and one of the greatest difficulties in the way of providing relief in an effectual shape, is to be found in the fact that the great mass of the population directly depends upon agriculture, and that there is no other industry from which any considerable part of the community derives its support. The failure of the usual rain thus deprives its labouring class, as a whole, not only of the ordinary supplies of food obtainable at prices within their reach, but also of the sole employment by which they can earn the means of procuring it. The complete remedy for this condition of things will be found only in the development of industries other than agriculture and independent of the fluctuations of the seasons. With a population so dense as that of India these considerations are of the greatest weight, and they are rendered still more serious by the fact that numbers who have no other employment than agriculture, are in large parts of the country greatly in excess of what is really required for the thorough cultivation of the land. So far as this is the case, the result must be that the part of the population which is in excess of the requirements of agriculture eats up the profits that would otherwise spring from the industry of the community. It is not surprising that in a country thus situated material progress is slow."

What action was taken by the Government to promote the development of industries other than agriculture ? In 1881, with the exception of salt, all remaining import duties were abolished. The import duty on cotton goods had been abolished two years earlier.

8. Effect of the Great War on Indian Industries.

India owes such industrial advance as has taken place to the lucky accident of the last world war. The Indian Industrial Commission (1916-18) brought home to the

Government and the people the danger of industrial deficiencies The Industrial Commission wrote

> **" The list of industries which, though their products are essential alike in peace and war, are lacking in this country is lengthy and almost ominous Until they are brought into existence on an adequate scale, Indian capitalists will, in times of peace be deprived of a number of profitable enterprises, whilst in the event of a war which renders sea transport impossible, India's all important existing industries will be exposed to the risk of stoppage, her consumers to great hardship, and her armed forces to the gravest possible danger."***

Every effort was made by the Government during the Great war to develop industries whose products were required, directly or indirectly for war purposes. The Indian Munitions Board was established in February, 1917. The functions of the Board were "to control and develop Indian resources with special reference to the needs created by the war,—to limit and co ordinate demands for articles not manufactured or produced in India, and to apply the manufacturing resources of India to war purposes with the special object of reducing demands on shipping The primary object of the Munitions Board was to meet the demands of the armies operating in Mesopotamia but it helped very materially in the development of Indian industries by purchasing in India articles and materials needed for the civil and military departments and for the railways by diverting, so far as it was practicable, orders for articles and materials from the United Kingdom to manufacturers in India, by giving assistance to individuals and firms who desired to import plant or to engage technical and chemical experts and skilled labour from England or elsewhere in order to establish new industries or develop old ones, and by the dissemination of information and expert advice and the giving of other direct or indirect encouragement to persons prepared to establish new industries in India.

Apart from action taken by the Government to encourage Indian industries, the rise of prices, caused by the heavy decrease in all kinds of imports, gave a great stimulus to Indian manufacturing enterprise Attempt was made by manufacturers to fill the gap caused by the shrinkage of imports Old industries were strengthened and enlarged and new industries were established But for certain causes, arising out of our pre war industrial weakness, the growth of industries during the war would have been even more rapid than it was. These causes were (1) the difficulty of importing machinery and materials such as are not made in India ; (2) the shortage of coal and coking plant and the shortage of railway wagons and coasting vessels ; (3) the difficulty of procuring from abroad chemical and technical experts and (4) the shortage of skilled labour.

---

* ***Report*, Pp 55-56.**

9. Discriminating Protection.

India's fiscal policy was examined by the Fiscal Commission of 1921-22. The report of the Commission was not unanimous, the minority recommending 'Protection' and the majority 'Protection applied with discrimination.' The difference between the two points of view, for all practical purposes, is slight, for protection must always be applied with discrimination. A Tariff Board was constituted in accordance with the recommendations of the Fiscal Commission. In dealing with claims for protection the Tariff Board has to satisfy itself (*a*) that the industry possesses natural advantages, (*b*) that without the help of protection it is not likely to develop at all, or not so rapidly as is desirable, and (*c*) that it will eventually be able to face world competition without protection.

The chief object of the Commission in recommending the adoption of a policy of discriminating protection was to reduce the burden which protection inevitably imposes upon the consumer, to prevent the establishment of unsuitable industries (which might be the result if all kinds of industries were indiscriminately protected), and to minimise the effect of protection on the balance of trade, or to maintain a favourable balance of trade.

10. Iron and Steel.

The first fruit of the labours of the Tariff Board was Act No. XIV of 1924 to provide for the fostering and development of the steel industry in British India. The Act authorised the Governor-General in Council to give bounties on steel rails and fish-plates and on railway wagons to companies producing these articles, registered under the Indian Companies Act of 1913, with a rupee capital, and having a certain proportion of Indian Directors, and imposed duties of 30 to 40 per cent on imported iron and steel according to the stage of manufacture of the imported article, and the requirements of the Indian industry. Protection in the first instance was granted for a period of three years, until the end of March, 1927. The rise in the rupee exchange after the passing of the Act and the continued depression in the steel industry in European countries led to two further enquiries by the Tariff Board in 1924 and 1925.

The situation was re-examined by the Tariff Board in 1926. It recommended the continuance of protection for a period of seven years, that is until 1933-31. The system of bounties was discontinued on the ground that it was likely to prove very costly. The production of the Indian steel industry was increasing, and it was doubtful whether the revenue from the protective duties would be sufficient to cover the cost of the bounties. Further, an element of preference was introduced in the duties levied on imported iron and steel. Two scales of duty were adopted—"basic duty" and "additional duty." The "basic duty" was fixed with reference to the price of steel imported from the United Kingdom Continental steel, in addition to the 'basic duty', paid the 'additional duty.'

Under protection the iron and steel industry progressed rapidly, and in 1934 protection was extended till 31st March, 1941.

Iron and Steel Industry

Year	Number of Companies	Chain index Base 1928 = 100
1928	2	100·0
1929	2	18·6
1930	2	70·6
1931	2	78·0
1932	2	66 2
1933	2	90 3
1934	2	169·2
1935	2	192 9
1936	2	179·0
1937	3	211·6
1938	3	316 7
1939	4	289·5
1940	4	300·8
1941	4	387·4

The profit earned by the industry in 1940 amounted to 4·45 crore Rs., and in 1941 to 5·73 crore Rs.

The industry attained an average annual output of 750,000 tons of finished steel in normal times ; 300,000 tons per year were imported. The output in 1941-42 was at least 50 per cent greater than in peace-time.

Adequate arrangements have been made at Jamshedpur (Tata Iron and Steel Works) for the welfare of labour.*

11. Cotton Mill Industry.

Bombay is the home of the cotton mill industry, but the first cotton mill was established near Calcutta in 1818. The first cotton mill was established in Bombay in 1851; ten years later there were a dozen mills at work in India and by 1879-80 the number of mills had risen to 58. They employed about 40,000 persons, and had a little over 13,000 looms and about 1,500,000 spindles. In the year 1900-01, 422 million yards of cloth were produced in Indian mills. In 1913 Indian Mill production amounted to 1,164 million yards, while 3,197 million yards of cloth were imported from foreign countries (the United Kingdom sending us 3,104 million yards and Japan 9 million yards).

At the close of the last century the industry was essentially a spinning industry (a little less than half of the total yarn produced was exported). The transformation from a spinning to a weaving industry took place during the 10 or 12 years preceding the last world war. During the war imports of cloth declined, prices rose and Indian production began to increase rapidly; but the three years immediately following the close of the war were a period of the greatest prosperity for the mill industry. All mills were working to their full capacity; the capital invested in the industry almost doubled between 1917-18 and 1921-22, and high profits were earned in Bombay and elsewhere. The percentage of dividends to paid-up capital in the case of Bombay mills was 40·1, 35·2 and 30·0 in 1919, 1920 and 1921 respectively. The boom was followed by the inevitable depression. Stocks of yarn as well as cloth increased and the attempt to force down wages led to strikes. The net profit of about 4 crores in 1922 was converted into a loss of 92 lakhs in 1925 and 134 lakhs in 1925. A demand for protection was made in 1926, but protection was not granted to the industry before 1930 (the Cotton Textile Industry Protection Act of 1930).

---

* "Space does not permit here to assess adequately the infinite attention, care and forethought which have gone into the planning of the beautiful garden town of Jamshedpur and its environment where there are no slums, "busti" and no plague-spots such as mar many industrial towns of the West and the older towns of India And what is more, the Steel Company has assumed the entire responsibility from the very beginning for proper administration of all its civic functions and obligations with courage and determination. Housing, health, sanitation, medical relief, education, recreation and social welfare on modern scientific lines all come in for a due measure of generous attention Inside the works, the adoption of an eight-hour day the provision of liberal service rules production bonus, provident fund benefits, safe-guards against accidents establishment of canteens and maintenance of proper working conditions have contributed materially to reduction of industrial fatigue, accident and illness, and to promotion of general improvement in morale and efficiency. Thus has the tempo of modern industrialism in India been set by the Tata Steel Works." (*Capital.* Trade and Industries Supplement, 1938, p. 50.)

A British Textile Mission, representing the Lancashire cotton industry, visited India in 1933 and concluded an Agreement relating to import duties on cotton goods, and encouragement of the consumption of Indian cotton in Lancashire. This Agreement is known as the Mody-Lees Agreement. In January 1934 a Trade Agreement was concluded with Japan which, for the first time, fixed a quota for Japanese imports (400 million yards) and linked imports from Japan with purchases of Indian cotton by Japan. A second Agreement with Japan, based on the quota system, was concluded in 1937.

The progress of the industry under protection has been rapid. 4084 million yards of cloth were produced in Indian mills in 1937-38, which is more than double the output of 1928-29 (1,893 million yards). The imports of cloth had fallen to 591 million yards in 1937-38. The variation in profits is shown by the chain index :

Year	No. of Companies	Chain Ind
1928	58	100·0
29	58	99·1
30	58	37·9
31	58	52·5
32	58	82·8
33	58	33·9
34	58	90·1
35	59	89·0
36	59	98·8
37	59	138·2
38	59	208·3
39	61	154·6
40	61	217·1
41	64	533·2

The output of cloth in 1941-42 amounted to 4,494 million yards. The chain index shows that profits of the year 1941 (declared in 1942) were about 5⅓ times as high as those declared in 1928, and about twice as high as those in the preceding year.

12. The Sugar Industry.

The Sugar Industry (Protection) Act was passed in 1932. Since then the progress of the industry has been remarkable. In the year 1932 the total number of sugar factories in India was 32 and the total production of sugar was 478,000 tons. In 1937-38 the number of factories had increased to 136 (not including 2 in Burma) and total production of sugar exceeded one million tons. The imports of Java sugar, which amounted to 937,000 tons (value Rs. 16 crores) in 1928-29, had sunk to about 13,000 tons in 1937-38 (value Rs. 17 lakhs). India had become self-sufficient.

Most of the sugar produced in India is cane-factory production, the proportion of khandsari and that of sugar refined from gur being negligible. Khandsari is an inefficient method of producing crystalline sugar of comparatively poor quality by boiling sugar in open pans.

U. P. and Bihar are the two important centres of sugar production, U.P. accounting for 57 per cent and Bihar for 24 per cent of the total output.

The growth of the sugar industry led to a considerable increase in the area under sugar between 1931-32 and 1935-36 (from 3'0 million acres to 4'4 million acres). The production of gur also increased considerably. After 1936-37 the area under sugar has fluctuated considerably.

In the U. P. and Bihar the price of sugar cane purchased by factories for crushing is fixed by Government.

We have built our sugar industry with imported machinery. The total value of sugar machinery imported between 1932-33 and 1937-38 was 8¼ crore rupees.

An excise duty was imposed on factory produced sugar at the rate of 1-5 per cwt. in 1934-35. The object of the excise was partly to compensate the Central Government for the loss of revenue from sugar import duties, and partly to prevent the too rapid growth of industry, which was considered unhealthy.

The excise duty was enhanced in 1937 and again in 1940.

The present output of 151 factories may be taken as slightly exceeding 1 million tons annually. A policy of restriction of production was adopted in 1941-42. The output of gur rose from about 2'8 million tons in 1931-32 to 3'4 million tons in 1940-41.

13. Match Industry.

Protection created the sugar industry. The match industry provides another example of the beneficial effects of protection under favourable conditions.

Before the year 1921 there was only a single match-factory (the Gujrat Islam Match Factory of Ahmedabad) which, in spite of severe foreign competition, could make a small profit. The imports of matches in 1919-20 amounted to 15 million gross boxes. In March 1921, the duty on imported matches, which had already been raised from 5 per cent *ad valorem* to 7½ per cent in March, 1916, was fixed at 12 annas per gross, and in March, 1922, it was raised to Rs. 1-8-0 per gross. All these changes in duty were determined by fiscal necessity. The increase in duty in 1921 and 1922 took place at a time when the Government of India were faced with a succession of budget deficits.

"With the imposition of a duty on imported matches," says the Report of the Tariff Board on the match industry, between 100 and 200 per cent *ad valorem*, the position changed rapidly."*

The increased duty was leviable on finished matches, not on undipped splints and veneers, and arrangements were made to import the latter from Japan. The manufacture of matches from imported veneers and splints proved very profitable. From 1st March, 1924, specific duties were imposed by Government on veneers and splints for the sake of revenue. But in the meantime Indian enterprisers had gained some experience of match manufacture They now imported machinery for the manufacture of splints, veneers and boxes; aspen wood, on which a 15 per cent *ad valorem* duty was levied, was imported from Japan or Sweden. An Indian match industry thus came into existence.

The Tariff Board estimated that in 1927, 27 match factories existed in India, with an out-turn capacity of 500 gross boxes a day or over, and a total capacity of about 18 million gross boxes annually.

14. Cement. The cement industry in India enjoys many natural advantages. Limestone of excellent quality exists in many parts of the country. The longest distance over which limestone has to be conveyed is 32 miles. Suitable clay is found close to the works, and there are ample supplies of limestone and clay for a long period of years. Gypsum, the only other raw material needed, is also produced in India. The supplies of labour are adequate and the process of cement manufacture does not necessitate the employment of highly skilled workers from abroad. In respect of fuel, however, the cement industry is subject to a serious disadvantage. With one exception, all the companies are situated at long distances from the coalfields, and the freight on coal is a very serious item in the cost of production.

---

* *Report*, P. 4.

The Indian market for Portland cement is a large and growing one. Between 1900 and 1910 imports increased from 43,000 tons to 135,000 tons and in the last two pre-war years (1916-18), when home production was negligible, cement was being imported at a rate exceeding 140,000 tons a year.

The total quantity of Portland cement produced in India in 1914 was 945 tons.

During the Great War Indian cement factories (3 in number) were working under Government control, and the great bulk of their output was taken by the Indian Munitions Board at a price not exceeding Rs. 55 a ton *ex-works*. Control ended in the middle of 1919 and the companies were able to sell their product at very remunerative prices, which were, however, much below the price of British cement. In 1922 the price of Indian cement began to fall, and it fell still more heavily in 1923-25 when the production of the new factories came on the market. The fall in price was entirely due to production having exceeded consumption. An application for protection was made to the Tariff Board which recommended the grant of a bounty, under certain conditions, on the cement conveyed to the ports. The Government of India refused to take any action on the ground that there were objections of principle to conditional legislation, and that they saw no justification for Government intervention.

Prices were stabilised by agreement among producers. In 1926 the Indian Cement Manufacturers' Association was formed and shortly after this the Concrete Association of India. In 1930 the Cement Marketing Company of India, Ltd., was established to control the output on a quota basis, and to save waste on account of excessive railway freights by a rational distribution of orders.

Both the output and the price are controlled by a merger which was effected in 1936. Since then the cement industry is working more or less as a single organisation. India has attained self-sufficiency in regard to cement and imports have dwindled to a low figure. The production of Portland cement in 1937-38 amounted to about 1·2 million tons.

15. Paper.

The Government decided to assist the bamboo and the paper pulp industry in 1925 by the imposition until March 31, 1932, of a specific protective duty at the rate of 1 anna per lb. on all printing paper (with certain exceptions) which contained less than 65 per cent of mechanical pulp and on all writing paper.

The grant of protection to the Indian paper industry marked a new phase in the development of the industry. Paper has been manufactured in Indian mills for about 60 years now. After the Great War the industry suffered much on account of dumping by foreign manufacturers of paper, and the rise in exchange added to the difficulties against which Indian manufacturers had to contend. Competition from Scandinavia and Germany before the Great War made all Indian companies lose, but they made considerable profits during the Great War. After the Great War intense foreign competition started, assisted as it was by depreciated currencies, with the result that the Indian mills were undersold. Germany and England were chiefly responsible for dumping paper into India. The Scandinavian mills cannot afford to dump, as the domestic consumption of Norway and Sweden is small and no manufacturer can dump 80 or 90 per cent of his output.

In the year 1926, 9 paper mills were working in India with a total output of 32,144 tons. The Tariff Board estimated the output of Indian mills at 33,000 tons a year, and expected, as the result of the expansion of the industry, that the output could be raised to 43,000 tons annually.

It is impossible to make newsprint in India. Mechanical pulp has never been made from either grass or bamboo, the raw materials used in India. We cannot have cheap newspapers unless we continue to use (imported) papers containing a high proportion of mechanical wood pulp.

Old newspapers come almost entirely from the United Kingdom and are used largely in Bombay, Sind and Burma as the cheapest kind of wrapper. No manufactured paper can compete at the prices at which old newspapers are sold.

There are also certain kinds of papers which are not likely to be made in India : expensive rag papers ; all coated paper such as art paper ; and special manufactures such as blue match paper and tissue papers. Indian mills have started, making pasteboard, millboard and cardboard.

Paper has hitherto been made in India from *sabai* grass but grass on account of its high cost, has no chance in competition with bamboo pulp. The future belongs to the bamboo and the paper pulp industry.

Paper made from bamboo pulp is inferior to *sabai* grass paper in strength and durability, but for the great bulk of papers consumed in India bamboo fibre is quite good enough —certainly as good as wood, and possibly better. The quantities of bamboo which are commercially available in India are enormous. Mr. Raitt is of opinion that "from bamboo, taking only that which is available under possible manufacturing conditions, Burma, Bengal and South West India could produce ten million tons of pulp per annum—India could therefore produce pulp for the whole world."*

The advantage of using bamboo pulp in paper-making is that its supplies are practically inexhausible. Bamboo is annually reproductive; wood requires 60 years to grow.

The supply of raw material for the Indian paper industry is secure, and we may even say that when our bamboo resources are developed, our manufacturers of paper will be in a position of advantage as compared with European manufacturers. But in certain other respects they enjoy no advantge.

The cost of chemicals in India is high. Most of the chemicals required for the manufacture of paper are now made in India, but their prices are regulated by those of imported chemicals and they usually exceed the prices paid by European mills by the full amount of the sea-freight and landing charges, and in most cases, of the customs duties as well. Another difficulty is that the chemicals have to be brought to the mills from long distances, and the transport charges are heavy. Similarly most of the mills have to pay heavy transportation charges for coal. The best coal in India is found in one locality—the Raneegunj coal-field, and a paper mill which chooses to be near the sources of the raw material has to pay a heavy price for its coal. Indian labour is cheap, but when we consider the possibilities of expansion of our industry we cannot forget that the initial cost of paper mills in India is high—that of a new European mill is estimated to be three-fourths or two-thirds of the initial cost in India.

On the whole, the prospects of paper-making from bamboo pulp are hopeful. While the manufacture of paper from *sabai* grass under conditions of absolute free trade, except in the Punjab, is considered to be impossible, it is expected that if the abundant supplies of bamboo which exist in India are developed, the industry will need no further assistance for many years than what the existing protective duty gives it, and that eventually, as the cost of wood pulp increases, the industry would be able to do without protection altogether.

---

* Paper read to the Royal Society of Arts in 1921.

The production of paper in 1939-40 is shown below :—

Production of paper in 1939-40	1939-40 (1,000 cwts.)
White and unbleached printing, other than news printing ...	591
Coloured printing, other than news printing ...	43
Writing paper and envelopes ...	395
Manilla ...	22
Badami ...	162
Packing papers ...	83
Pulp-boards ..	22
Blotting ...	15
Other kinds ...	84
Total ...	1,417

The actual output of paper of all kinds in 1939-40 was about 71,000 tons, which is 63 per cent higher than the level which the Tariff Board expected the industry to attain (43,000 tons annually).

The chain index for the paper industry (1928=100) shows a fall in profits to 86·6 in 1932 and a rise to 342·0 in 1940 and 419·8 in 1941.

16. Jute.

The inception and development of the jute industry is due to foreign enterprize.*

---

* The following passage, taken from the *Imperial Gazetteer of India*, Vol. III, relates the early history of jute:

"Jute fibre was first experimented with by Europeans in 1820, the result being so unfavourable that brokers were for some years subsequently required to give a guarantee that sales of fibre effected by them were free from adulteration with jute. One of the earliest commercial references to the fibre occurs in the Customs returns of 1828. In that year 364 cwts. of raw fibre valued at Rs. 620 were exported to Europe. The manufacture of gunny bags and cloth was at that time entirely in the hands of the Bengal peasant weavers, but the traffic could not have been very extensive. In 1832 an enterprising Dundee manufacturer experimented once more with the fibre and was able to show that it might be used as a substitute for hemp. From that date jute gained rapidly in popular favour. It was recognised that it was capable of the most minute separation, but it is only within the last few years that this advantage has been utilised for the finer textile purposes In time the difficulty of bleaching and dyeing the fibre disappeared; and the success of jute being thus assured, the foundation of the manufacturing enterprise of Dundee and Calcutta was laid."

The average area under jute from 1895-96 to 1899-1900 was 2 million acres and the average yield of jute 5·8 million bales of 400 lbs. each. During the last world war exports of raw jute declined but those of jute manufacture increased from about 20 crores of rupees (average 1909-10, 1913-14) to 45 crores of rupees (war average). Before the trade depression, in 1928-29, the area under jute was 3·1 million acres and yield 9·5 million bales.

The contraction of world trade during the depression years and the use of substitutes caused a heavy fall in the price of jute. The fall of jute prices was disastrous: at the same time the quantity of raw jute and jute manufactures exported decreased.

The situation was met by the curtailment of factory production and Government propaganda to persuade the cultivator to sow less jute. Foreign manufacturers (Dundee, in Scotland, manufactures jute goods) took advantage of curtailment of Indian production to capture an appreciable proportion of Calcutta's trade.

Several fibres have begun to compete with jute, *e.g.*, Sisal, a fibre extracted from the broom plant in Italy; NewZealand flax and Canadian sack wool.

According to a newspaper report (*Tribune* of Lahore, dated April 12, 1944), a survey of the United States Department of Agriculture states that the production of jute in the Amazon valley has risen from 22,000 bales in 1937 to 4 million bales in 1943, and a substantial increase in production in 1944 is expected.

New uses for jute have also been discovered. Jute may be used for insulating materials, for roofing, and for the production of sheeting for internal and external walls. Jute cloth may be used for wire mesh in concrete structures and also in road making.

The total output of jute manufactures increased from 1 million tons in 1935-36 to about 1·3 million tons in 1939-40. The principal jute manufactures are :—canvas, gunny bags, gunny cloth, rope and twine.

The varying fortunes of the jute industry between 1928 and 1941 are well brought out by the chain index :

Profits in the jute mill industry

Year	Number of companies	Chain index Base 1928=100
1928	47	100·0
1929	47	85·6
1930	47	37·9
1931	49	8·7
1932	50	12·6
1933	52	19·8
1934	53	34·4
1935	53	39·8
1936	53	25·9
1937	56	11·1
1938	59	−9·8
1939	60	13·6
1940	60	48·9
1941	60	46·8

17. Tea.

In 1932-33 exports of tea from India amounted to 379 million lbs. as compared with 367 million lbs. in 1927-1928, but the value of exports was a little over 17 crores as compared with about 32½ crores in 1932-1933. The fall in the value of exports was due to the fall in price.

The only method of arresting the decline in prices was restriction of production and of exports. At the suggestion of the Dutch a plan was adopted in 1932, which was to remain in operation for five years, by which the principal producing countries undertook not to export more than a given quantity in any year, the quantity to be revised annually. The control of exports is now statutory. But it soon appeared to the Indian Tea Association that "the control of exports was not in itself the Alpha and the Omega of recovery."* The control of exports was supplemented by the control of production. A scheme of voluntary control of production was devised and put into operation with the requisite support of 93 per cent of the producers in India.

Propaganda to increase the sale of tea or to encourage tea-drinking in India is carried on by the Indian Tea Market Expansion Board. It is estimated that the consumption of tea in India has risen from 18 million lb. in 1902-1903 to

---

* *Capital*, **December, 1933, Supplement, P. 22.**

10 million lbs. per annum at the present time. This represents a consumption per head of less than ¼ lb. in India as compared with 11 lbs. per head in the United Kingdom.

The tea industry, 'taking a very long view', is thinking of developing the American markets. It is feared that the British demand for tea will tend to decline. "There seems little reason for doubt that in fifty years' time the population of Great Britain will be considerably less than it is now, and it is therefore essential to find some market to replace that which will be lost as a result of the decline in the population of Great Britain" (*Capital* Jubilee Number, p. 105).

International tea control has been referred to above. Towards the end of the year 1937 the continuance of international control was agreed to by the participating countries, and it continues.

In the year 1939-40, about 738,000 acres were under tea in British India, and the yield of tea was about 453 million lbs.

The chain index (base 1928 = 100) shows a fall of profits to —1'1 in 1932 and a rise to 95'5 in 1940 and 139'9 in 1941.

Statistics of production of paints and heavy chemicals are published annually in the *Statistical Abstract for British India.* Paints include : dry colours, paste paints, mixed paints, enamels, varnishes, and oils (excluding raw linseed oil). The heavy chemicals for which statistics are available are : hydrochloric acid, nitric acid, sulphuric acid, alum, aluminium sulphate, ammonium sulphate, ferrous sulphate, magnesium sulphate (Epsom salt) and sodium sulphate (Glauber's salt).

The number of woollen mills at work in British India in 1939 was 13. Production figures are not available.

APPENDIX B

Cottage Industries in the United Provinces

Indigenous industries "are rapidly declining" for the following main reasons :

1. Machine competition. Machine-made goods are cheaper, are better advertised, and present a wider range of choice.

2. Small industries in articles of luxury are subject to changes of fashion and ideas.

3. Both the former patrons and producers are poorer than they used to be. Improvidence and intemperate habits have made the cottage worker poor.

4. Lack of co-operation among workers. They undercut each other and spoil the market. The price at which the neediest worker sells rules the market. By combining the producers will be able to raise prices.

5. Loss of skill and knowledge. This is partly the result of the falling off in demand.

"The improvement and extension of the cottage industries of the province," says the Census Superintendent, "is of vital importance. It would seem that the only remedy is for commercial men to pick out the cottage industries the products of which are likely to meet with a demand in this country, improve the processes as far as possible, and advertise and make arrangements for distribution."[1] He thinks the competition with machine-made goods in the United Provinces is of significance to organised industries, but "of secondary importance to the development of cottage industries."

The more important cottage industries are the following : —

Papier Mache in Badaun City. It is stated to "have fallen on evil times." The local manufactures cannot find even a local sale "in the face of the showy Japanese and German goods sold everywhere."

Amroha City once produced cotton pile-carpets which "adorned palaces at Delhi and Agra." Many small industries in the Moradabad District have been destroyed by money-lenders

Amroha produces durries, which have also been affected by competition from cheap machine-made durries. Other declining or extinct Amroha industries are : embroidered caps (which have been replaced by the fez), embroidered waistcoats, *saris* and other articles of dress, brass fittings for carts and palanquins, the glass industry. "which has completely disappeared due to imported aticles from Bombay and Japan," swords, *dholaks,* pottery, combs, and horn articles.

---

[1] *Census Report for the United Provinces*, 1931, p. 424.

The brassware industry of Moradabad is flourishing. It is now using electrical machinery to fashion the vessels. Sheet-brass is replacing *bharat* brass. *Kalai* (tinning) is being displaced by yellow polish. These changes are reducing the number of people employed in the industry.

Village artisans in the Etawah District are abandoning their crafts and taking to agriculture for a livelihood. The glass bangles industry is not doing well, but Etawah silk and cotton cloth still have a market.

Phul (vessels made of a special alloy of copper, tin and certain other metals) and brassware industries of the Ballia District "are at present suffering acute depression." The demand for polished earthenware jars (decorated with geometrical designs or flowers) and for locally made perfumery has also fallen.

"Garhwal reports that cotton growing and spinning has died out completely in the last 50 years in the face of outside competition."[2] The import of metal wares has ruined the manufacture of wooden cooking and drinking utensils. Basket-making is also dying as a result of external competition.

Rai Bareli District makes crude glass phials, domestic utensils, and iron nut-crackers. "The fine muslin weaving of Jais, Nasirabad and other places is now reported to be extinct as a result of the spread of the cheaper machine-made varieties."

Some demand exists in Nepal for cloth woven and printed in the Fyzabad and Gonda Districts.

There is a considerable export from the Gonda District of *bankas* grass used in making paper. *Patwa* fibre is also pressed and exported.

Cloth-weaving and calico-printing have declined for the usual reason. *Babka* grass is made into ropes in the Bahraich District and exported.

The indigenous sugar industry is declining in all districts. Flour mills have replaced hand grinding in most towns.

Decaying Industries of Bengal

Blacksmiths are found at work in every district of Bengal They make primitive implements used in cultivation, tyres for bullock carts and locks of a simple type.

Blanket-making is an industry of Western Bengal

Boat-building is practised wherever there is water. Chittagong was once famous for its ship-building and still makes a characteristic type sf sea-going boats.

" Indigenous brass and bell metal industries have been seriously affected by the importation of cheap enamel, aluminium and porcelain vessels."*

Cotton-weaving is the most universal home industry. Silk of more than one kind is reeled, spun and woven in several parts of the province.

Other industries are the making of cart-wheels : conch shells ; dyes (the making of vegetable dyes is now extinct in Bengal) ; *gur* and sugar ; articles of horn ; lac toys ; lime (from *kankar*) ; mats ; baskets and wicker-works ; measuring bowls of wood ornamented with brass plates ; pottery ; sola helmets from the pith or the soft, white wood of the *sola* plant, and also toys, decorations and bridal crowns ; and vegetable oils. As illuminations, vegetable oils "have been ousted by cheap kerosene."†

---

[2] *Census Report for United Provinces, 1931,* p. 425.

* *Census Report for Bengal,* 1931, P. 304.

Disappearing Industries of Madras

The industries which have disappeared or are disappearing from Madras are the manufacture of glass bangles (now extinct) ; paper ; *Kalam Kari* or printed cloth (chief seat Masulipatam) ; pithwork, including garlands ; musical instruments and ornamental fans of Tanjore ; indigo ; toys; lacquer-work ; boats (boat-building experienced a temporary revival at the outbreak of the last world war on account of the shortage of vessels) ; *Jutkas* (a conveyance) ; gold and silver lace-thread ; crochet-lace and artistic pottery. Jutka building is declining on account of the development of motor transport and the opening up of the country by the railway. Some the causes of the decline of crochet-lace industry are (1) changes of fashion, (2) keen competition of Japanese lace and of machine made lace imported from other countries, and (3) high duties levied in the United States of America and other countries.

Cottage Industries in the Punjab

Valuable information about cottage industries in the Punjab towns and rural areas is given in a monograph entitled "*Survey of Arts and Handicrafts in the Punjab*" prepared by the Punjab Department of Industries. I am indebted to the Department for permission to use it.

A village community requires articles of domestic use and agricultural tools and implements It is the function of village artisans to meet these requirements. A very large proportion of the goods that they produce is thus meant to satisfy a local demand.

The weaver produces coarse cloths of various descriptions, *i.e.*, *durries*, *khes* (bed-spread), *dotahis* (bed spread), *chadars*, *Khaddar*, *tehband* (waist-cloth), *lungis* (turban cloth), *daryais* and coarse woollen *lois*, blankets, etc.

The blacksmith supplies agricultural implements made of iron such as ploughshares, axes, rakes, scythes, and iron pots, pans and other utensils. Expert blacksmiths make Persian wheels and spare parts.

The carpenter supplies agricultural implements made of wood and articles of domestic use.

The shoe maker supplies leather parts of agricultural implements and shoes, the blacksmith's bellows, the water carrier's *mashk*, leather thongs, whips, etc The potter makes glazed and unglazed clay crockery and toys, earthen vessels, *hukkas*, *chilams*, bricks, etc.

Other rural craftsmen are tanners, oil-millers, tailors, goldsmiths, dyers, masons, calico printers, utensil-makers, brick-moulders, and rope and string manufacturers.

The following village industries also deserve to be mentioned :

Leather tanning (Lahore, Multan, Sialkot and other districts), weaving of specialised designs (Multan and Hoshiarpur, and near

---

† *Census Report for Bengal, 1931* ; P. 309

‡ *Census Report for Madras, 1931* ; P. 250.

Leiah and Bhera), wool-weaving (Muzaffargharh and Kulu valley), silk-weaving and Multani *lungis* (Multan, Hoshiarpur and Amritsar), mat-making and basket work (Muzaffargarh), Persian wheels, reed-stools with and without arm rests (Kasur), papier mâché and clay toys (Kangra), Damascene work, weighing scales, lacquer-work, spinning wheels and *piras*, mother-of-pearl buttons, links, hair-clips, ear-rings, watch-chains, bracelets, necklaces, rings, etc. (Jullundur), shellac (Jullundur), woollen blankets and rings (Jullundur), chased lacquer-work (Hoshiarpur), fodder-cutters, sugar-cane presses, oil engines and sugar centrifugals (Jullundur), trouser-strings, brass and ivory inlaid and carved furniture and lacquer-work toys (Hoshiarpur), brass and copper utensils (Hoshiarpur) cutlery (Gujranwala), floor-durries (Gujranwala) wooden combs, and harness and saddlery (Gujranwala).

The industry which supports the largest number of craftsmen is cotton-spinning, and sizing—2½ lakhs of male and female workers in the Punjab.

Most of the articles produced by village craftsmen are crude and bulky, and the external demand for them is negligible. It is further stated :

"The output of industrial products, both for the market and household consumption, has declined considerably owing to the heavy imports of cheaper substitutes."

This is true of both agricultural implements and articles of domestic use.

The wooden Persian wheel is being replaced by iron Persian wheels fitted with galvanized iron-sheet buckets, the wooden floor mills by iron mills, the hand-chopper by the mechanical cutter, and the wooden sugar-cane crusher by the iron-roller. Cheap tin enamel-ware and aluminium-ware are replacing the products of the village potter and metal utensil makers.

As the result of this competition the profits of rural artisans have fallen "to the barest minimum."

The position of most of the hand-workers in towns in this respect is very much the same : "The importance of the articles produced by handicraftsmen is declining on account of cheap imported substitutes and Indian mill-made goods which come into competition with them."

A list of the handicrafts practised in the towns of the Punjab is given below :—

Metal : Steel trunks ; masonry instruments ; utensils of brass, copper and bronze ; locks ; carpenter's tools and instruments ; knives ; swords ; kirpans ; scissors and razors (Jagadhri) ; iron vessels and almirahs (Jagadhri) ; iron safes (Amritsar and Gujranwala) ; tinware ; and iron railing and gates ; gold and silver-refining ; fly-shuttle loom (Amritsar) ; galvanized iron sheet trunks, tubes, buckets, etc. Persian wheels ; iron chairs and tables ; macaroni machines and brass handles for almirahs ; tailor's iron ; joiner's hammer ; charcoal boxes ; wool-clippers ; sugar-pans and *karahis* (Batala) ; *Kharas* or flour-mills; cutlery (Wazirabad) ; hunting and garden knives (Wazirabad).

Textile : Cotton bed-sheets ; silk lungis ; woollen *chadars* and *dhussas* (Jalalpur Jattan); woollen blankets (Panipat); silk saris, shirtings and suitings; artificial silk; daryai shirting and curtain cloth; raffle cloth ; machine-embroidered shawls (Lahore and Amritsar) ; dyeing ;

cotton piece-goods; wool-cleaning (Fazilka); cotton and woollen yarn; cotton tussores ; trouser-strings.

Artistic : Fancy wood-work (Chiniot) ; embroidered kullahs ; clay toys (Ropar) ; glazed pottery (Multan) ; calico-printing ; chikendozi ; ornamental painted leather vessels (Multan) ; carpets (Multan and Amritsar) ; silver-enamelled goods ; ivory boxes ; lacquered woodwork ; gota-kinari ; embriodered shoes ; artificial jewellery ; phulkari embroidery (Jullundur) ; lac bangles ; gold and silver ornamental utensils,

Leather : Gut (Sialkot) ; tanned leather ; bottles and jars for containing oil (Jhang) ; boots and shoes (Karnal and Hansi) ; belting ; harness and saddlery ; Indian shoes.

Wood : Basket-ware ; furniture; cane walking-sticks ; combs of horn and wood ; cart and cart-wheels ; bed-legs ; wooden slippers, flutes (Kartarpur) ; packing boxes.

Miscellaneous : Sports goods (Sialkot) ; musical instruments : hand-made paper (Sialkot) ; book-binding ; ink ; card-board boxes ; shellac ; brushes; chick curtains; bricks : hemp ropes ; tiles (Amritsar) , patra-mats and brooms ; sugar candy (misri and kuza) ; confectionary and bakery goods ; jams, chutney and pickles ; vinegar, bar-soap ; perfumery, essences, and hair oil ; candles ; disinfectant fluids, chalk; pencils and crayons (Gujranwala).

CHAPTER IV

LABOUR PROBLEMS

In this chapter we are concerned with factory labour. The educated unemployed are dealt with separately. Both classes taken together represent a small fraction of the population. This is not to say that their welfare is of minor importance, or is not a proper subject for study. But it should never be forgotten that an over-whelming majority of our workers are not employees, but independent producers, *e.g.*, peasant proprietors, tenant cultivators and hand-workers. They work not for wages, but profits. In the industrial countries of the west employees or 'wage-slaves' form a high proportion of the total number of workers, that is not so in India.

1. The Indian Labour Commission.

Problems connected with Indian factory labour were examined by the Indian Labour Commission, appointed in 1929. The recommendations of the Labour Commission, which cover a wide field may be divided into three groups :—(1) conditions of employment and work, (2) the standard of life of the worker, and (3) general questions relating mainly to the industrial worker, namely, workmen's compensation, trade unions and trade disputes.

As regards hours of work the Commission suggested a weekly limit of 54 with a daily limit of 10 for adults, and 5 for children of from 12—15, instead of the then prevailing 60 and 11 for the former and 6 for the latter. Detailed recommendations were made regarding rest-intervals, spread-over of hours and exemption of factories from the provisions of the Factories Act relating to hours of work.

Working conditions in factories were subjected to a careful examination and remommendations made for improving the welfare and safety of the workers under the headings : Health, Safety, Welfare and Administration. Special stress was laid on amenities for working mothers.

As regards seasonal factories (cotton ginning and pressing factories, tea factories, rice mills and jute presses) the Commission recommended the establishment of standards "which may not be identical with those of perennial factories, but which will be enforced with as much vigour as is applicable to the latter."

The Commission drew pointed attention to certain gross abuses of child labour in seasonal factories, *i.e.*, unhealthy conditions of work, corporal punishment in some places, long hours and low pay (2 annas for 10 or 12 hours of work). The recommendations of the Commission regarding the pledging of the labour of persons under 15 years were meant to apply to all, and not merely to unregulated factories (*i.e.*, factories using power but employing less than 20 persons, or factories using no power but employing a substantial number of workers).

Weekly hours of labour in mines were fixed by law at 60 above ground and 54 below. The Commission recommended reduction in hours of work above ground to 54; that recruitment of women for underground work be discontinued; and that children under 14 be excluded from work in or about mines.

The Report of the Commission vividly describes the deplorable housing conditions in industrial areas. The Commission urged the need for town-planning Acts in Bombay and Bengal, and asked the Government to lay down minimum standards regarding cubic space, ventilation and lighting, drainage and sanitation, and to insist on the adoption of model bye-laws issued by them (Government). The Government were also to subsidise in various ways employer's building schemes approved by them. The Commission also recommended the strengthening of the Provincial Public Health Departments and the enactment of comprehensive public health measures. Particular attention was to be devoted to anti-malarial measures and to maternity welfare; the enactment of maternity benefit schemes was suggested.

The Commission recommended the extension of the Workmen's Compensation Act of 1923, and the improvement of scales of Compensation

In regard to trade unions the Commission recommended that registration of unions should be encouraged and their recognition made easy. The Trade Unions Act was to be re-examined in not less than three years time.

The Commission recommended collaboration between the employer and the Trade Union (where such exists) in the formation and working of Works Committees. Also there should be a larger body of representatives of workers and employers of the industry in the centre concerned. The establishment of some permanent statutory machinery to deal with trade disputes was to be considered before the expiry of the Trade Disputes Act of 1929 in 1934. Meanwhile Government were to utilise their power to establish Boards or Courts where considered necessary or useful. Every provincial Government was to have an officer or officers to undertake the work of conciliation and bringing about private agreement.

The Commission also recommended that in the frame-work of the future political constitution provision should be made for an Industrial Council which would enable representatives of employers to confer regularly on labour measures and policy. Labour representatives should be elected by registered Trade Unions or, failing this, nominated by Government. The functions of this Council were thus defined :

(1) to examine proposals for labour legislation referred to it and also to initiate such proposals ;

(2) to promote co-operation and understanding among those concerned with labour policy ;

(3) to advise the central and provincial Governments on the framing of rules and regulations ;

(4) to advise regarding the collection of labour statistics and the co-ordination and development of economic research.

2. Government Action on the Report.

Special reports show the action taken by the Government of India and the provincial Governments on these recommendations.

Many of the recommendations which involved Central legislation have been given effect to in the Factories Act of 1934. This Act repeals the Indian Factories Act of 1911 and the amendments of the Act in 1922, 1923, 1926 and 1931.

Working Hours of Adults.—The weekly limit is 54 hours for perennial factories and 60 hours for seasonal factories.*

Sunday will be a holiday except in cases specially provided for in section 35.

Daily hours.—The limit is 10 hours for perennial and 11 hours for seasonal factories.

There will be a rest interval of one hour after six hours of work, or of ½ hour after 5 hours of work, or two rest intervals of ½ hour before any one works for more than 8½ hours.

Spread-over.—The periods of work of an adult worker in a factory shall be so arranged that along with his intervals for rest they shall not spread over more than 13 hours in any day.

The Local Government may make rules for adult workers providing for the exemption of workers engaged on urgent repairs, or in work which, for technical reasons, must be carried on continuously, etc., from the rules mentioned above. But no exemption from the provisions of section 36 (daily hours) may be granted in respect of any woman : no woman is allowed to work in a factory except between 6 a.m. and 7 p.m.

---

*There is no change in the definition of a factory. As before it is a place where power is used in manufacturing processes and not less than 20 persons are employed daily.

Special provision has been made for night shifts, and for extra pay for over-time (ordinarily 1½ times the ordinary rate of pay).

Adolescents and Children.—No child (defined as a person under 15) who has not completed his 12th year shall be allowed to work in any factory ; non-adult workers (children and adolescents) shall carry tokens giving reference to certificates of fitness.

No child shall be allowed to work in a factory for more than 5 hours any day, and the hours shall not spread over more than 7½ hours. No child shall be allowed to work except between 6 a m. and 7 p.m.

Adult labour may not be exacted from an adolescent (defined as a person who is below 17 but has completed his 15th year), unless he has been granted a certificate of fitness to work in a factory as an adult.

Chapter III of the Factories Act of 1934, which is concerned with health and safety, contains provisions relating to cleanliness, ventilation, artificial humidification, cooling, overcrowding lighting, water, latrines and urinals, precautions against fire and means of escape, safety of buildings and machinery, tests of stability of building or machinery, etc., notice of certain accidents and other matters. The recommendations of the Labour Commission have been carried out.

The Commission had recommended the application of certain section of the Factories Act to unregulated factories. The extension of regulations to unregulated factories raised questions of difficulty "especially at a time when financial considerations make it impossible to contemplate any substantial increase in the strength of the inspecting staff."* Government legislative action has been limited to recommendations involving the alteration of the law applicable to factories already subject to regulation. But effect has been given to the recommendation of the Commission that a bond pledging the labour of a person under 15 years executed for or on account of any consideration should be considered void. The Children (Pledging of Labour) Act was passed in 1933. An agreement to pledge the labour of a child shall be void, but an agreement made without detriment to a child, and not

---

**Second Report showing the action taken by the Government on the Report of the Labour Commission*, p. 8.

made in consideration of any benefit other than reasonable wages to be paid for the child's services (terminable at a week's notice) is not an "agreement to pledge the labour of a child."

3 Mines.

The Indian Mines Act of 1923 was amended in 1935. The amended Act provides for a weekly day of rest, and limits hours of work above ground to 51 a week and 10 in any day. The periods of work along with intervals for rest shall not spread over more than 11 hours.

The following are the provisions of the Act relating to hours of employment below ground :

(1) The periods of work of a person employed to work below ground in a mine shall be reckoned from the time he leaves the surface to the time he returns to the surface and shall not in any day spread over more than 9 hours.

(2) No such person shall be allowed to remain below ground except during his periods of work.

Work above ground shall not be carried on in any mine for a period exceeding 11 hours in any day, except by a system of relays so arranged that not more than one relay of persons employed in work of the same kind shall be at work in the mine at the same time.

(3) The employment in any mine of children under 15 years of age is prohibited.

4. Payment of Wages.

In organised industry in India the monthly payment of wages is the rule. The Labour Commission favoured the adoption of the system of weekly payments, but were not prepared to advocate its general enforcement by Government. They, however, recommended the prevention of delayed payments. As the Government of India stated to the Commission, it was no uncommon thing, and the rule in certain industries, for monthly wages to be systematically withheld until a fortnight after the close of the month to which they related. The Commission's recommendation was that the law should insist on the payment of wages within 7 days from the expiry of the period in which they have been earned in the ordinary case.

The Commission also noted certain abuses in connection with deductions from wages. They found fining common in perennial factories and on railways. Other deductions were on account of medical attendance, education and reading rooms.

interest on advances of the labourers' own wages, charities, religious purposes selected by the employer, and various other benefits or causes. A common practice in the textile mills was the handing over to the weaver of cloth from his own loom spoilt in the course of manufacture, and the deduction from his wages of the wholesale selling price. In some mills two days' pay was deducted for one day's absence.

The Commission considered legislation to regulate deductions from wages 'both necessary and desirable.'[1] In the case of children they recommended the abolition of fines by law. A Bill to regulate the payment of wages to certain classes of persons employed in industry was introduced in the Legislative Assembly on the 13th February, 1935, and it became an Act in 1936.

The Act applies to factory employees, and, with the exception of section 5, to railway employees.

Section 5 provides for the payment of wages before the expiry of the 7th day from the last day of the wage-period in which the wages have been earned in the ordinary case.

The Act recognises 11 kinds of deductions which may be made from wages and no other.* No child (person below 15 years) can be fined. In the case of adults, stringent rules have been framed to regulate fines. Among other things, the total fine imposed on an individual in a month must not exceed an amount equal to half an anna in the rupee of the wages earned by him in that month. Fines and realisations must be recorded in a prescribed form. A deduction for damage or loss must not exceed the amount of the damage or loss caused to the employer by the neglect or default of the workman. Deductions for house accommodation or other services should not exceed the value of the service rendered, provided the house accommodation or other service has been accepted.

Claims arising out of deductions from wages or delay in payment of wages will be heard and decided by a suitable person appointed by the Local Government.

---

[1] *Ibid.* 218.

* By way of fire or damage to or loss of goods entrusted to the worker; housing accommodation, or other specified services; recovery from the first wage payment of advances of money given before employment began; advance payment of wages already earned or in adjustment or over-payment of wages; other advances of wages made subject to rules framed by the Local Government; income-tax payable by the worker; deductions made under any order of Court or other competent authority; on account of any recognised Provincial Fund; on account of payment to approved co-operative credit societies.

5. Workmen's Compensation.

The Labour Commission recommended that the old Act of 1923 should now be extended to cover as completely as possible the workers in organised industry whether their occupations were hazardous or not, and that there should be a gradual extension to workers in less organised employments; the Commission also mentioned particular classes which were to be included. In pursuance of these recommendations the Indian Legislature passed the Workmen's Compensation) (Amendment) Act of 1933. The classes mentioned by the Commission have been included.

The compensation payable in certain cases is given in schedule IV attached to the Act. In the event of death of an adult workman the amount of compensation payable rises from Rs. 500 when the monthly wage is not more than Rs. 10, to Rs. 4,000 when the monthly wage exceeds Rs. 200. For the same limits of wages, the amount of compensation for permanent total disablement of an adult workman varies between Rs. 700 and Rs. 5,600. In the case of temporary disablement half monthly payments are made: half his monthly wages to the injured workman earning not more than Rs. 10 a month, and rising from Rs 6 to Rs. 30 in the case of others The compensation in the case of a minor is as follows: death, Rs. 200; permanent total disablement, Rs. 1,200; temporary disablement, one half of his monthly wages subject to a maximum of Rs 30.

In the case of temporary disablement the half monthly payments begin after the expiry of a waiting period of 7 days from the date of the disablement and continue during the disablement, or during a period of 5 years, whichever period is shorter.

---

* Workmen employed in factories using power and employng not less than 10 persons, and in factories not using power employing not less than 50 persons; workmen in all mines, except open quarries in which less than 50 persons are employed and no explosives are used; workers employed in docks and in oilfields; certain classes of iseamen; workers on tea, coffee or rubber plantations employing not less than 50 persons—no distinction has been made between Government and non-Government plantations; workmen engaged in building work; workmen engaged in connection with the generation and distribution of electrical energy; workmen engaged in the construction, maintenance or demolition of canals, sewers, public roads, dams, embankments, etc.

The number of cases reported and the amount of the compensation paid since the Workmen's Compensation Act came into force (1924) have increased. Between 1924 and 1938 the total amount of compensation paid totalled over a crore and a half of rupees in over 280,000 cases.

6. Industrial Disputes.

The Trade Disputes Act of 1923, as amended in 1932, continues in force. The principal features of the Act are described below.

The Act is divided into three main parts. The first part relates to the establishment of tribunals for the investigation and settlement of trade disputes. If any such dispute exists or is apprehended, the Local Government or the Governor-General in Council may refer the dispute to a Court of Inquiry or a Board of Conciliation appointed for the purpose. On a Board of Conciliation, when it does not consist of independent persons, the parties to the dispute will be equally represented.

Neither party to a dispute would be under any obligation to accept the findings of a Court or the advice of a Board of Conciliation, but the decision of the Court or the Board will be published, and public opinion counts in such matters.

The second part of the Act relates to public utility services. A public utility service is defined as any railway which the Governor-General in Council may so declare for the purposes of the Act ; any postal, telegraph or telephone services ; any undertaking or business which supplies light or water to the public ; and any system of public conservancy or sanitation. Clause 15 of the Act makes it a penal offence for workers employed on monthly wages in public utility services to strike without previous notice.

The clauses relating to illegal strikes and lockouts follow closely the provisions of the British Trade Disputes and Trade Unions Act of 1927. They apply when both of the following two conditions are satisfied : (1) a strike or lockout must have other objects than the mere furtherance of a trade dispute within the industry concerned, and (2) a strike or lockout must be designed to coerce the Government either directly or by inflicting hardship on the community.

Provincial labour legislation relates to a variety of subjects, the most important of which are workmen's protection against money-lenders, trade disputes, maternity benefits, payment of wages and unregulated factories. The Industrial Disputes

Act (1938) provides for the registration of unions which have been recognised by the employers concerned or which fulfil certain requirements as regards membership. Strikes and lockouts have been made illegal until the machinery for conciliation provided in the Act has been made use of. Moreover conciliation can start to function immediately a dispute is likely to occur, for an employer or a workman who desires to make a change in wages or other conditions of employment must give notice of his intention to do so to the prescribed authorities, and no change can be effected until conciliation machinery has been used to the fullest extent.

The Act makes provision for the appointment of an Industrial Court for settling industrial disputes and for dealing with other matters under the provisions of the Act.

The Act, as amended in 1941, provides for compulsory arbitration in certain cases. The Government may refer any dispute to the arbitration of the Industrial Court if it is satisfied that the continuance of any dispute is likely to cause serious or prolonged hardship to any section of the community or seriously affect an industry.

7. Shops Legislation.

Shops legislation was enacted in Bombay in 1939 and in Bengal, Sind and the Punjab in 1940. The Bombay Act prescribes the maximum hours of work of persons employed in shops at 9½ hours per day (which is half an hour longer than the ordinary factory day). There is to be a weekly holiday with pay, and no person can be employed for more than five continuous hours without an interval of rest for at least half an hour. The closing time for shops is 9 p.m. excepting special cases (chemists and druggists). Street hawking after 5 p.m. is not permitted either.

The Punjab is the only province which provides for opening hours, 7 A.M. in summer and 8-30 A.M. in winter. The Bengal and the Punjab Acts prescribe that every shop shall be closed for at least one and a half day and one day respectively in each week.

8. The Industrial Statistics Act.

This Act was passed by the Central Legislative Assembly in 1942. It is 'permissive', that is, the decision to apply rests with Provincial Governments. The Act permits the collection of statistics with regard to any of the following matters: (1) prices of commodities (2) attendance, (3) living conditions, including housing, water-supply and sanitation, (4) indebtedness, (5) rents, (6) wages and earnings, (7) provident and other funds provided for labour, (8) benefits and amenities provided for labour, (9) hours of work, (10) employment and unemployment, and (11) industrial and labour disputes.

The regular and systematic collection of industrial statistics is of the greatest importance for scientific purposes. We shall never have these statistics until they are compulsorily collected by a central agency. The opposition to the collection of such statistics comes, as might be expected, from employers.

9. The Standard of Living.

An enquiry into working class budgets was carried out by the Bombay Labour Office in 1921-22. 2,473 working class family budgets, and 603 single men's budgets—a total of 3,076 budgets, were collected. About half the budgets referred to cotton mill workers, the remainder being budgets of municipal workers, dock labourers, and railway and engineering workers. The average working class family consisted of 4·2 persons, *viz.*, 1·1 men, 1·1 women, and 2·0 children under 14, exclusive of ·6 dependents living away from the family. The average earnings of the family per mensem of all the 2,473 families were Rs. 52 4 6. If we include average earnings in the 603 single men's budgets (Rs. 43 10 3 per mensem) the average earnings of men for the total of 3,076 budgets drop to Rs. 42 9 6 per mensem. The income of 75 per cent of the families for which budgets were collected ranged between Rs. 40 and Rs. 70 per mensem. How was the income spent? The percentage expenditure on the main groups was as follows:

Table IV. 1.

Food	... **56·8**	**per cent.**
Fuel and lighting ..	... **7·4**	,,
Clothing ...	... **9·6**	,,
House rent ...	... **7·7**	,,
Miscellaneous . .	... **18·5**	,,
	100·0	

Thus more than half the total family income was spent on food. The percentage of expenditure on food was found to decrease as the income increased, thus confirming Engels' Law.

The quantity of food consumed by the industrial workers in Bombay was insufficient. "The general conclusion," says the report, "is that industrial workers consume the maximum of cereals allowed by the Famine Code, but less than the diet described in the Bombay Jail Manual."

Comparative Figures.

The following tables, borrowed from the India Year-Book for 1943-44 supply comparative data having a bearing on the standard of living of workers:—

Table IV. 2.

Percentage Distribution of Expenditure.

	Food	Fuel & lighting	Clothing	House rent	Miscellaneous	Total
Bombay (1932-33)	46·60	7·11	7·75	12·81	25·73	100·0
Ahmedabad (1933-35)	49·31	6·65	9·12	10·97	23·95	100·00
Sholapur (1925)	49 25	9 60	11·86	6·27	23·02	100·00
Nagpur (1927)	64·10	9·62	10·70	1·92	13·66	100·00
Jubbalpur (1927)	66·00	7·95	10·86	1·44	13·75	100·00
Rangoon (1928)	52·70	5·20	10·60	13·90	17·60	100·00
Madras (1938)	52·63	6·67	4·50	11 14	25·06	100·00

The items included under the group 'food' etc. are not the same in different provinces, but still the figures are valuable as showing how total expenditure is distributed in different parts of India. Food accounted for a high proportion of total expenditure in Central India in 1927. The improvement in Bombay as compared with 1921-22 is marked.

The miscellaneous group, which is heavy, includes interest on debts and instalments of debts.

The following table shows the average size of the family and the average monthly income (before the war).

Table IV 3.

	Average No. of persons per family	Average monthly income Rs	as.	ps.
Bombay	3 70	50	1	7
Ahmedabad	4·05	46	5	0
Sholapur	4·57	39	14	10
Nagpur	4·33	...	...	...
Jubbalpore	3 76	...	...	...
Rangoon (Burmese)	3·01	58	8	8
Madras	6·03	37	5	11

Ignoring Burma, Bombay leads in respect of average monthly income, and Madras in respect of the size of the family. The figure for Madras (6·03) seems disproportionately high.

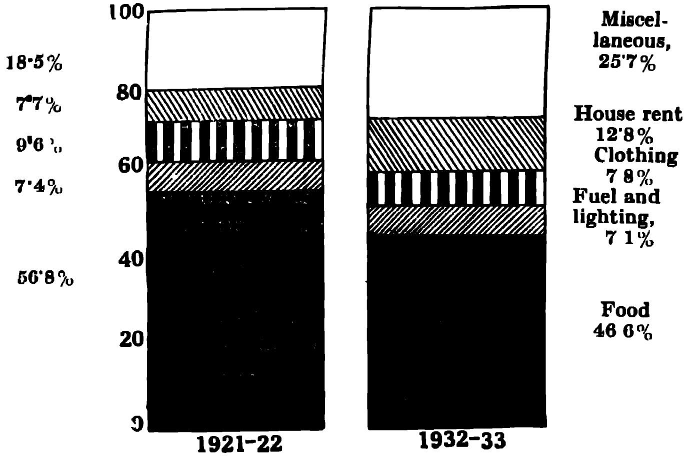


Fig. 20.

Showing the distribution of expenditure in the case of Bombay Cotton Mill workers in 1921-22 and 1932-33. Note the substantial decline in the percentage expenditure on food, showing improvement in the standard of living.

For data, see Tables IV. 1 and IV. 2

Attention may be drawn to a recent investigation into wages and conditions of labour in the engineering industry in the Bombay Presidency. The wage data for the engineering industry relate to 221 engineering concerns and 471 others and the total number of employees covered is over 75,000. The average monthly earnings for all workers in six of the important graded occupations in all factories (May 1934) are given below :

	Rs.	as.	p.
Moulders . .	41	10	3
Blacksmiths	50	6	0
Fitters	53	4	9
Machinists, turners	51	1	4
Carpenters	39	9	0
Painters	40	3	2

Including both skilled and unskilled workers, the average daily earnings come to Re. 1-11-4 and the average monthly earnings to Rs. 39-3-10. Excluding unskilled labourers, the average daily and monthly earnings are Re. 1-14-5 and respectively Rs. 43-14-5.

The average wages both for skilled and unskilled workers are considerably higher in the engineering industry than in other industries.

The Indian Labour Commission emphasized the need for raising the standard of living, for the poverty of the worker reacts on his efficiency. "Thus poverty leads to bad conditions, bad conditions to inefficiency, and inefficiency to poverty. We believe in attempting to break the vicious circle at as many points as possible. There must be an endeavour to enhance efficiency, to heighten earnings and to improve the conditions of life."[1]

Indebtedness.—The Commission estimated that in most industrial centres the proportion of families or individuals who were in debt was not less than two-thirds of the whole. They believed that in the great majority of cases the amount of debt exceeded three months' wages and was often far in excess of that amount. The rates of interest were high, in some cases even 150 per cent or more per annum ! The Commission were impressed by the number of cases in which an industrious worker was obliged to curtail his expenditure on necessities to meet interest charges "without the faintest prospect of being able to reduce the principal."[2] They made a number of recommendations regarding the attachment of wages and salaries and imprisonment for debt. Their recommendation for the reduction of the period of limitation for debts and the period within which a decree may be kept alive has not been accepted by Government. The Government have decided that "no change in the existing law is called for."[3]

---

[1] *Report of the Labour Commission*, p. 208

[2] *Ibid.*, p. 226.

[3] *Second Report*, loc. cit. p. 10.

10. Frequencies of Rates of Wages.

Examples of symmetrical wage distribution are rare. A frequency distribution (which is explained below) is said to be symmetrical when it produces a bell-shaped curve, with the point of maximum density in the centre, and with equal length of tail on either side. The Bombay engineering industry (wage census of May 1934) provides a single example.

1. *Frequencies or rates for moulders on daily rates.*
(Ahmedabad City)

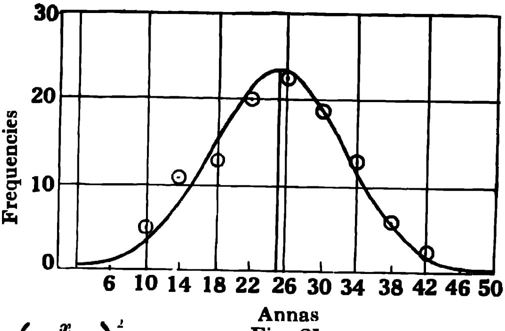
(Source : *Report on wages etc. in the Engineering Industry of Bombay Presidency.* May 1934. p. 106).

Table IV. 4

Class-intervals	Mid-point of class-interval	Actual frequencies	Calculated frequencies
			·23
			1·01
As. 8 and below As. 12	10	5	3·33
,, 12 ,, 16	14	11	8·25
,, 16 ,, 20	18	13	15·47
,, 20 ,, 24	22	20	21·80
,, 24 ,, 28	26	23	23·42
,, 28 ,, 32	30	19	18·99
,, 32 ,, 36	34	13	11·68
,, 36 ,, 40	38	6	5·38
,, 40 ,, 44	42	2	1·88
			·51
			·10
		112	112·00

Col 1 of the table shows the wage-groups, technically called 'class-intervals.' The wage-earners, totalling 112, have been classified according to wage-groups. The curve is plotted against the mid-point of each class-interval, shown in col, 2. Of the 112 wage-earners, 5 were earning wages from 8 annas to 11 9909 annas and so on. Col. 3 of the table thus shows the frequency distribution of the wage-earners. The last column shows the smoothed curve, with the maximum ordinate erected at 25 as. The height of the maximum ordinate is 23·61. The fitted curve, called the 'Normal curve of error' stretches infinitely on both sides, ever approaching but not meeting the axis of x.

Showing frequencies of rates for moulders on daily rates, 1934 (Ahmedabad City)- The observed frequencies are shown by circles. The normal curve fitted has the equation :



$$y = \frac{112}{1\cdot 8922\sqrt{2\pi}}\, e^{-\frac{1}{2}\left(\frac{x}{1\cdot 8922}\right)^2}$$

Fig. 21.

Table IV. 5.

2. *Total Numbers employed in the Engineering Industry of the Bombay Presidency (Source Loc. cit. pp. 155-160).*

Monthly Rates.

Class-intervals	Mid-point of class-interval	Actual frequencies	Calculated frequencies
Rs. 20 and below Rs. 35	27	2,650	2,856
,, 35 ,, 50	42	4,124	3,793
,, 50 ,, 65	57	3,401	3,454
,, 65 ,, 80	72	2,498	2,338
,, 80 ,, 95	87	1,350	1,425
,, 95 ,, 110	102	268	512
,, 110 ,, 125*	117	145	57
		14,436	14,435

Fig. 22 shows the fitted curve, which is a more complicated affair than the curve in Fig. 21. In the process of curve fitting one worker has been lost—this happens sometimes. The loss, out of a total of 14,436, is not heavy.

In this case the point of greatest density is not placed in the centre—the curve has a longer tail towards the right. This is usually the case with most wage distributions.

*** Includes an indefinite class, Rs. 120 and over.**

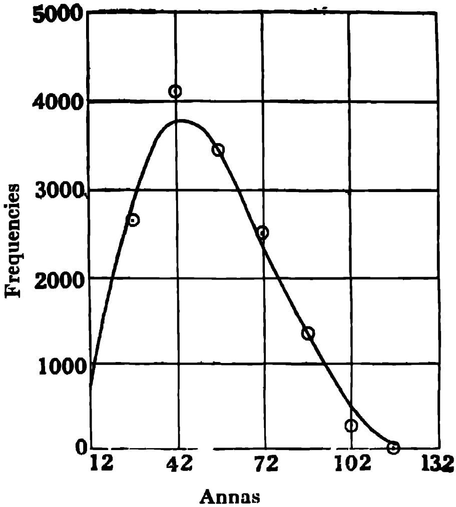


Fig. 22.

Showing a curve fitted to the total numbers employed in the Engineering industry of the Bombay Presidency, 1934 For data, see Table IV. 5. The observed frequencies are shown by circles. For the curve fitted see appendix to chapter IV (Appendix C).

Table IV. 6.

Examples 3 and 4.

Class-intervals	Mid-point of class-interval	Carpenters on daily rates (1934)	Cotton Mill industry. Men, all occupations. 1921 Daily Rates.	
			Actual No.	% of total
Under 8 as.	4	.	160	·2
As 8 and under As. 16	12	8	25,986	26·5
,, 16 ,, ,, 24	20	99	37,122	37·9
,, 24 ,, ,, 32	28	122	23,572	24·1
,, 32 ,, ,, 40	36	209	5,104	5·2
,, 40 ,, ,, 48	44	364	3,877	3 4
,, 48 ,, ,, 56	52	410	1,067	1·1
,, 56 ,, ,, 64	60	224	860	9
,, 64 ,, ,, 72	68	10	670	·7
,, 72 ,, ,, 80	76	8	...	...
,, 80 ,, ,, 88	84	1	...	...
		1,540	97,918	100·0

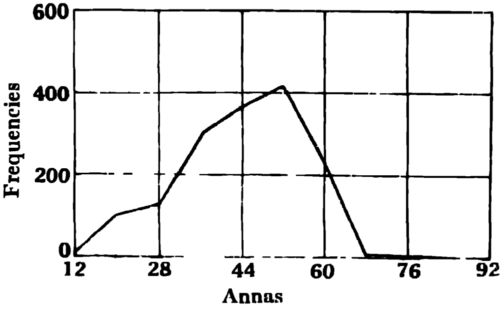


Fig. 23.

Showing frequencies of rates for carpenters on daily rates (May 1934) employed in Bombay City. The curve has negative skewness. For data, see Table IV. 6.

(Source : For carpenters on daily rates see the *Report on Wages* etc, *in the Bombay Engineering Industry* cited above, p. 114 The figures relate to Bombay City. For the Cotton Mill industry see the Report issued by the Bombay Labour Office on an *Enquiry into Wages and Hours of Labour* in this industry, 1923, p. 38. The figures relate to Bombay City and Island).

The curves are shown in Figs. 23 and 24. The contrast is striking. A longer tail towards the left means better wage conditions for there are more workers in the higher wage-groups.

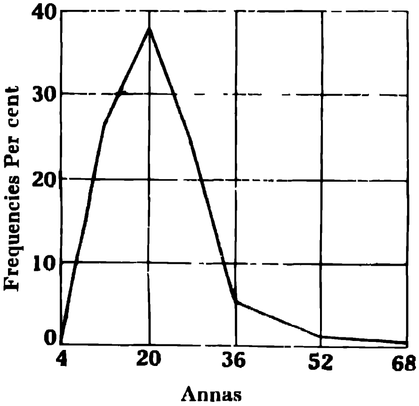


Fig. 24.

Showing frequencies of rates for men employed in all occupations in the Bombay cotton mill industry in 1921. The curve has positive skewness. For data, see Table IV. 6.

It is a matter for regret that frequency rates for the cotton mill industry were not tabulated at the wages census of 1934. Considering the improvement in conditions, the shape of the curve, as compared with that of 1921, must have altered for the better.

11. Wages in Assam.

On tea plantations the cash earnings of the worker are supplemented by certain concessions: free housing, medical facilities, firewood, free grazing for cattle, and land for cultivation. But the Labour Commission found that few gardens could offer a holding of any size to the majority of the workers; the remaining concessions were of still less importance. The Commission emphasized the importance of cash wages, but the cash wages were low. The average monthly earnings in the Assam Valley (1929-30) were Rs. 13-8-7 for men, Rs. 11-1-7 for women and Rs. 7-8-6 for children, calculated on the assumption that the worker was not absent on a single working day.

There are powerful organisations of employers in Assam, and wages are, in effect, determined by the joint action of the employers. There are no unions of tea coolies, who are illiterate, speak many different languages, come from different parts of India, and live and work in the comparative isolation of plantation life. "Workers in such a position," concluded the Labour Commission, "stand in special need of protection," and they recommended the introduction of wage-fixing machinery in Assam.

Any impartial reader of the Labour Commission's Report would agree with this conclusion. But Sir Victor Sassoon, a member of the Commission, expressed his dissent in a separate note.[1]

Both in their written statements, and in the evidence tendered by them the representatives of the tea-industry opposed statutory minimum wages. The Indian Tea Association wrote: "As so few labourers work the full number of days it is considered that the statutory establishment of a minimum wage is unnecessary and would be difficult to enforce."[2] The Darjeeling Planters' Association described the proposal as "unnecessary and inadvisable."[3] The Indian Tea

---

[1] "If the Assam tea-industry could have been classed as 'sweated' industry, this exceptional treatment might have been justifiable: but as facts are, it seems to me that the proposed imposition of Minimum Wage Boards would be an act of injustice to trade in which the worker, according to the Local Government, "can already earn enough to keep him in health and reasonable comfort." (P. 485 of the Report).

[2] *Assam Evidence*, p. 75.

[3] *Ibid.*, p. 85.

Planters' Association, Jalpaiguri, considered it absolutely unnecessary.[1] Mr. J. Insch, Chairman of the Indian Tea Association, Calcutta, in his oral evidence said that they had already so fixed their piece-rates as to yield an ordinarily diligent coolie not less than a given amount per hour. The Commission failed to understand why, if most of the members of the Tea Association were already doing it, as a body they objected to the fixation of a minimum rate which would bring the worst gardens up to the level of the others.[2] It was pointed out to the Chairman that there was no possibility of collective bargaining as between the tea garden coolies and a body of managiug agents as Mr. Insch's Association (i.e., the coolies' employers). Mr. Insch replied that the Tea Association was not primarily concerned in the matter—"so any bargaining will be as between the coolies and the managers."

Q. F. 2947. ' What I am asking is whether you as an Association consider that there is any real possibility of collective bargaining between even your managers and the tea garden coolies in their present state of education ?"

The incredible reply of the Chairman of the Indian Tea Association was "I think so" !

If practicable, the Labour Commission considered the establishment of statutory wage-fixing machinery in the Assam plantations desirable, and they had good reasons to believe that if proper methods were adopted, a practicable scheme could be devised.

It is extremely doubtful if such a scheme would ever be devised—none has been devised so far.

12. Trade Unions.

Statistics of industrial disputes are available since 1921. Between 1921-41 the heaviest loss of working days (about 32 millions) occurred in 1928. That was a time of depression in the cotton mill industry. The number of disputes in all industries in that year was 203 involving, 5 lakhs of workers. The years 1930-32 were comparatively peaceful. The total number of disputes during these 4 years was 578 involving

---

[1] *Assam Evidence*, p. 93.

[2] *Ibid*, Question F. 3943—17.

[3] We learn that an officer was deputed to Ceylon to acquire experience of the working of wage-fixing machinery there. His report has been received and considered by the Assam Government "The existing wage-statistics, however, do not supply adequate material regarding the rates of remuneration owing to the lack of correlation between the earnings of the worker and his hours of work. The Government of Assam, therefore, propose to prescribe new forms of wage returns under section 37 (2) of the Tea Districts Emigrant Labour Act, 1932, (which came into force from 1st October, 1933). This will be done in consultation with the Controller of Emigrant Labour after he has acquired some practical knowledge of conditions on tea estates in different parts of the Province." (Second Report, loc, cit., p. 106).

about 7 lakhs of workers. As compared with our 146 disputes in 1933 the number of disputes in the United States in that year averaged 130 per month.

There was a recrudescence of trouble in 1937 and 1938, and owing to the rise in the cost of living, during the war. Industrial disputes since 1937 are shown below

Table IV. 7

Year	Number of disputes.	Number of workers involved (1,000)	Number of working days lost (1,000)
1937	379	648	8,982
1938	399	401	9,199
1939	406	409	4,993
1940	322	453	7,577
1941	359	291	3,331

Most of the disputes are concerned with wages and bonus, and a smaller number with personnel. In the majority of cases the workers succeed in getting their demands completely or partially accepted.

Mr. N. M. Joshi, of the Servants of India Society, moved a Resolution in the Legislative Assembly in March, 1921, recommending the enactment of legislation for the registration and protection of Trade Unions. The Trade Union Act was finally passed in March, 1925, and came into force on 1st June, 1927. A Trade Union has been defined in the Act (which is in force) as "any combination, whether temporary or permanent, formed primarily for the purpose of regulating the relations between workmen and workmen, or between employers and employers, or for imposing restrictive conditions on the conduct of any trade or business." The definition includes any federation of two or more Trade Unions.

The registration of Trade Unions is not compulsory, but any seven or more members of a Trade Union may, under certain conditions, apply for the registration of the Trade Union under the Act.

The two chief features of the Act are the principle of immunity in respect both of civil and criminal proceedings against a Trade Union, and the constitution of a separate fund for political purposes. Only registered Trade Unions will benefit by the legislative recognition of the principle of immunity.

From the political fund payments may be made "for the promotion of the civic and political interests" of the members of a Trade Union. This includes payment of any expenses incurred, either directly or indirectly, in connection with the election of candidates as members of legislative bodies or their maintenance, and the holding of political meetings of any kind, or the distribution of political literature or political documents of any kind.

It is also provided that not less than one-half of the total number of officers of every registered Trade Union shall be persons actually engaged or employed in an industry with which the Trade Union is connected. The object of this provision is to prevent a Trade Union from passing under the control of outsiders.

The following information is available about registered Trade Unions in India for 1939-40.

Table IV. 8

	Number	Membership
1. Railways, including railway workshops and other transport	86	179,381
2. Tramways	7	6,080
3. Textiles	85	136,931
4. Engineering	32	11,890
5. Printing Presses	37	19,546
6. Municipal	8	52,742
7. Seamen	23	23,465
8. Docks and Port Truts	20	6,768
9. Miscellaneous	152	74,335
Total	450	511,138
No. of women members		18,612

In 1930-31 there were 106 registered Trade Unions, with a membership of 219,115. Railways and textile workers are the best organised.

All Trade Unions are not registered unions. The Bombay Province had 183 unions in 1942 with a membership of 183,364.

The Labour Commission emphasized the need for the development of trade unions : "It is in the power to combine that labour has the only effective safeguard against exploitation and the only lasting security against inhuman conditions." The difficulties of industrial labour are many : (1) migratory character of the bulk of Indian labour, (2) poverty of the worker, (3) differences of language, (4) social and communal differences, and (5) ignorance, greed and tter incompetence of many so called labour leaders, who are very often prepared to sacrifice the interest of labour for their ends. In the Punjab interested parties have split up unions on the communal issue. Economic interests of workers of different communities are essentially the same, but not the interest of communal leaders.

At a special session of the All India Trade Union Congress, held at Nagpur in April 1938, the President complained that the membership of the unions had fallen and that the trade union movement all over India was at its lowest ebb. Efforts were made to unite different wings of the movement. A factor which led to the renewal of the efforts for unity was the formation of Congress Ministries which 'awakened in the hearts of trade union leaders the hope of winning trade union rights and the minimum demands of the workers.'

The earliest unions were formed by Bombay mill workers as far back as 1890. The All India Trade Union Congress was formed in 1920. At the session held in 1910, a split was caused by the adoption by the Trade Union Congress of a resolution of neutrality in connection with the war effort. Important groups quitted and the Royists formed a separate organisation called the Trade Union Federation.

APPENDIX C (CHAPTER IV)

Frequency Curves

Smoothing or graduating a frequency distribution is often a troublesome affair.

Two examples are given here.

1. *Moulders, on daily rates* (*Ahmedabad.*)

The student of statistics knows how to find M (mean) and σ (standard deviation).

Table I

Moulders on daily rates. Fitting the Normal Curve

Class-intervals		Mid point of class-interval		f_0	x	fx	fx^2
As.	8—	As.	10	5	—4	—20	80
,,	12—	,,	14	11	—3	—33	99
,,	16—	,,	18	13	—2	—26	52
,,	20—	,,	22	20	—1	—20	20
,,	24—	,,	26	23	0	0	0
,,	28—	,,	30	19	1	19	19
,,	32—	,,	34	13	2	26	52
,,	36—	,,	38	6	3	18	54
,,	40—	,,	42	2	4	8	32
				112		—28	408

$$d = \frac{-28}{112} = -\cdot25 \text{ class-interval} = -1\cdot00 \text{ anna } (-\cdot25 \times 4)$$

$M = 26 - 1 = 25$ As.

$$\sigma = \sqrt{\frac{408}{112} - (\cdot25)^2} = 1\cdot8922 \text{ class-intervals} = 7\cdot5688 \text{ As.}$$

$$\frac{N}{\sigma} = \frac{112}{1\cdot8922} = 59\cdot19.$$

$$1 \text{ class-interval} = \frac{1}{1\cdot8922}\sigma = \cdot5285\,\sigma$$

$\cdot25$ class-interval $= \cdot1321\,\sigma$

$\cdot75$ class-interval $= \cdot3964\,\sigma$.

The assumed mean is 26 As The actual mean is found to be 0·25 class-interval (or one anna) less than the assumed mean. The standard deviation is 1·8922 class-intervals.

Table II

Mid-point of class-interval	$\frac{x}{\sigma}$	Ordinate at $\frac{x}{\sigma}$	Calculated frequencies	Observed frequencies
	−3·04	·0039	·23	—
	−2·51	0171	1·01	—
10	−1·98	·0562	3·33	5
14	−1·45	·1394	8·25	11
18	− ·92	·2613	15·47	13
22	− ·40	·3683	21·80	20
25	·00	3989	23 61	—
26	·13	·3956	23·42	23
30	·66	·3209	18 99	19
34	1·19	·1965	11·63	13
38	1·72	·0909	5·38	6
42	2·25	·0317	1·88	2
	2·77	·0086	·51	—
	3 30	·0017	·10	—
			112·00	112

If $\sigma = 1·8922$ class-intervals, what is 1 class-interval equal to? Obviously $\frac{1}{1·8923}\sigma = ·5285\sigma$. Now the mid-point of the class-interval 24 – 28 As. = 26 As. is ¼ class-interval removed from the mean, which is 25 As. $\frac{x}{\sigma}$ for 26 As. is therefore $\frac{·5285}{4} = ·13$ $\left(\frac{x}{\sigma}\text{ for 25 As.} = ·00\right)$. 22 As. is ¾ of a class-interval removed from the mean Therefore $\frac{x}{\sigma}$ for 22 As is $\frac{·5285 \times 3}{4} = -·40$. $\frac{x}{\sigma}$ for 18 As. $= ·3964 + ·5285 = ·92$; that for 30 As. $= ·1321 + ·5285 = ·66$, and so on.

The ordinates at $\frac{x}{\sigma}$ are taken from prepared tables, but they may be directly calculated from the equation to the curve.

$$y = \frac{112}{1·8922\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{x}{1·8922}\right)^2}$$

The calculated frequencies are obtained by multiplying the value of ordinate at $\frac{x}{\sigma}$ in each case with $\frac{N}{\sigma}$

Example. II. **Total numbers employed in the Engineering Industry of the Bombay Presidency (1931).**

The calculations made to fit this curve are summarised in Table 3.

Table III

Total Numbers employed in the Engineering Industry of the Bombay Presidency (1934)

1	2	3	4	5	6	7	8
f_0	Cumulative f_0	$\log \frac{x}{a-x}$	$t-t_1$	K_0	K_c	Cumulative f_c	f_c
			[- 32]		[·01171]		[638]
2,650	2,650	-·6407251	- 17	·03769	·03582	2,856	2,856
4,124	6,774	-·0535536	- 2	·02678	·03106	6,649	3,793
3,401	10,175	·3779210	13	·02907	·02828	10,103	3,454
2,498	12,673	·8563808	28	·03058	·02838	12,441	2,338
1,350	14,023	1·5298406	43	·03558	·03222	13,866	1,425
268	14,291	1·9907097	58	·03432	·04066	14,378	512
145	14,436	1·1591469	73	·05698	·05260	14,135	57
14,436							14,135

$y = \cdot02838 + \cdot001819x + \cdot00187x^2 + \cdot0001156x$

$a = 14437$

Class-interval $= 15$.

Col. 1 shows the observed frequencies, and Col. 2 the cumulative totals. Col. 2. gives us the Ogive to be smoothed. We proceed as in the case of the population curve, which has been explained before. The maximum (a) is taken as the 14,437, or one worker more than the given number; $\frac{a}{2} = \frac{14,437}{2} = 7,418·7$. One class-interval $= 15$ is split up into -2 (against 6774) and 13 (against 10175). The other values shown in Col. 4 explain themselves.

A parabola of the 3rd order has been employed to smooth the observed *K's*. The cumulative frequencies shown in Col. 7 have been obtained from the calculated *K*'s (K_c), and figures in Col. 8 (f_c) are derived from the cumulative frequencies.

Putting $x = -4$ we get ·01171 as the calculated K when $t - t_1 = -32$ which gives 638 as the calculated frequency for a non-existing class-interval (Rs. 5 and below Rs. 20).

CHAPTER V

EDUCATED UNEMPLOYMENT

We have seen that we cannot properly speak of unemployment in agriculture. The pressure of population on the soil is heavy and, in *barani* tracts, the cultivator is idle for several months in the year. We may talk of under-employment or, in certain cases, of seasonal unemployment in agriculture, but there is no unemployment problem, as the term is understood in Western countries.

Similarly the cottage worker is an independent producer. He is being driven to the land by machine competition. He is poor but not unemployed.

The term unemployment has special reference to the wage earner. There must be some industrial unemployment in India, but its extent is not known. The 'employment situation' is examined in the Bombay Labour Gazette every month. The figures only relate to absenteeism (about 10 per cent) in the cotton mill industry in the Bombay Presidency. Very probably the amount of industrial unemployment in India is negligible - demand for labour has increased on account of the growth of manufacturing industries. But for one cottage worker who finds employment in a factory, probably ten are forced to the land.

There is unemplyment in the true sense among educated young men and (ignoring the effects of the war) it is growing. What are its causes ?

1. Progress of Education.

Bengal was the first Province to appoint a Committee (1922) to examine the problem of educated unemployment. Since then a Madras Committee, two Committees in United Provinces and two in the Punjab have discussed the question. The second Punjab Committee on unemployment was appointed in 1938.

There is general agreement that the main cause of educated unemployment is the progress of education.

	1911-12	1939-40
No. of Schools ...	130,030	215,052*
No. of Scholars ...	5,919,000	14,559,390
Passed No. of Scholars	142,000	511,732
No. of undergraduates	9,319	138,093†
No. of graduates ...	4,242	15,736†

In view of the rapid growth in the number of matriculates, under-graduates and graduates, it is not surprising that educated unemployment has attained serious dismensions. Striking examples of keen competition for jobs are given in the report of the Madras Committee on unemployment. A test advertisement in the newspapers for a clerk's post under the government carrying a salary of Rs. 35 per mensem brought in 666 applications (including 30 from graduates). No less than 787 applications were received in response to a similar test advertisment for a clerk's post in a commercial firm in Madras.

The education given in schools and colleges is mainly of a literary character. In introducing the system of education Lord Macaulay wrote : "We must at present do our best to form a class who may be interpreters between us and the millions we govern, a class of persons Indian in blood and colour but English in taste, in opinions, and in intellect." This class of interpreters duly came into existence and is ever growing, but there is not enough of interpreting for it to do.

School and college education leads to one end only—examinations. As the Bengal Committee wrote · "It is like a bamboo, each joint being an examination and the diameter remaining practically the same size from the root to very near the top. It has no branches and the crowning top covers a very small area."

2. Scope for employment in Government Service.

This is extremely limited. In the Punjab the total of Government servants, excluding menials, is 76,755, and including menials about 1 lakh. Government service absorbs 0·4 per cent of the population. The total number of the educated unemployed was estimated by the Punjab Unemployment

---

*Recognised institutions only.
†Excluding Burma.

Committee (1938) at 150,000 (p. 48). Even if all Government servants were to be replaced by the educated unemployed the problem is not solved. "The total salary bill of public servants amounts to over Rs. 4½ crores or 42 per cent of the Provincial revenues. Therefore there is very little scope in Government service for reducing the incidence of unemployment' (p. 48).

3. Cottage Industries.

Cottage industries are recommended for the educated unemployed. In this connection the Punjab Committee recommended an industrial survey of the Province. The following small scale industries are mentioned in the Punjab report:

Wheat products, such as starch, flour, quaker oats, biscuits etc.; manufacture of glue and shellac; pharmaceutical preparations; acids; chemical manures; alcohol from mollasses; soap and its products; inks; toilet goods; animal charcoal; bone-black; lamp-black; carbon paper; paper lamp shades; wall papers; manufacture of envelopes, braces and garters

The list may be extended to include gur, charkha and khaddar; tailoring, laundry work and dry cleaning; tomato canning: bee keeping; the manufacture of matches (as a cottage industry); candles; cane-basket ware; woollen blankets; cardboard boxes; pen nibs and other small metal articles; hosiery; buttons; jams, lac-varnishes and confectionary.

Among major industries, the Committee mentions the manufacture of leather goods, dry colours and mercerised cotton and artificial silk. Graduates may take to fruit-growing, market gardening, flori-culture, seri-culture, pisce-culture etc. etc.

It is forgotten that an average graduate is not a carftsman. As a cottage worker he will have to compete with skilled men already in the trade.

There is some scope in some professions which may be created or developed. They are pharmacy, dentistry, accountancy, architecture, librarianship, insurance work, secretarial work and journalism.

4. Agriculture.

Both in the Punjab and Madras agriculture has been discussed in relation to education. The first Punjab Committee (1927) recommended that small holdings should be provided for educated young men for certain purposes. It is doubtful if graduates will make model farmers. The Madras Committee recommended that village life should be made more attractive by starting social clubs and libraries. Education should be given an agricultural bias. The boys must be taught to value agriculture, the idea that agriculture is inferior to the occupation of a clerk, or the profession of a lawyer or teacher must be eradicated. "The example of the King Emperor and of the present Viceroy (Lord Irwin) should inspire the zamindars of this country to take up farming, cattle and sheep-breeding and improvement of crops more seriously. The Ministers in South Africa and the Leaders of the Opposition are several of them farmers by profession and a majority of them spend their leisure on their own farms."

There is much scope for the improvement of agriculture, and the sons of bigger zamindars might, with advantage, follow the advice given. But agriculture is already over crowded, and it is largely non-agricultural occupations that have to be found for the educated unemployed.

5 Post War Educational Reconstruction.

In January 1944 the Bureau of Education issued a report by the Central Advisory Board of Education on post-war educational development in India. An ambitious scheme has been drawn up, involving an estimated gross annual expenditure of not less than 313 crores, of which 277 crores is to be met from public funds. (In 1940-41, out of a total expenditure of about Rs 30 crores on education Rs 17 crores came from public funds.) What is of special interest to us is the development of technical, commercial and art education, with an estimated cost to Government of about [illegible] crores annually, and the proposal to establish employment bureaus, with an estimated annual charge on public funds amounting to Rs 60 lakhs.

6 Technical, Commercial and Art Education.

A report on vocational and general education in Delhi, the Punjab and the United Provinces was submitted to the Government of India in 1937 by Messrs Abbott and Wood, British experts. In this report Mr Abbott says:

"No country can maintain and develop its industries on a large scale unless it has an adequate supply of men specially trained for the direction and management of large industrial concerns as well as of others qualified for the minor but very important supervisory posts in them. On the other hand, it cannot be expected that capable and ambitious men will devote themselves to acquiring this special knowledge and skill unless they see a reasonable prospect of exercising it and gaining a decent livelihood thereby" (p 9).

We are thus confronted with a 'dilemma', or there is a vicious circle. Industries cannot grow without technicians, but technicians would not be forthcoming unless industries are pre existing

As we shall see later (Part II), this vicious circle is not so formidable that it cannot be broken. The need for the expansion of war industries created a demand for trained labour, which demand has been met.

Mr Abbott says

"Every great industrial country of Europe is now exhibiting a zeal for the development of technical education which has been described by a German writer as being 'almost feverish', and in every one of them, steps have been taken to enlist the interest and co operation of industry and commerce in the task of ensuring that the instruction had be both appropriate and sufficient India cannot afford not to follow their example" (p 41).

India would have readily followed their example long ago but for Government total lack of interest in the matter.

The function of technical education is to provide (*a*) skilled craftsmen, (*b*) intelligent foremen and executives, and (*c*) research workers

In a machine age skilled craftsmen mean makers and menders of machines and machine tools, highly trained in precision work The second category may be called the supervisory grade It is intermediate between the management and the operative

7 Mono-technics versus poly technics

A technical institution may serve one industry or group of industries (mono technic), or it may be a central institution (with ancillary schools) in which the more advanced work in all branches is concentrated (polytechnic). The Central Advisory Board of Education, in its report, prefers polytechnics, except where an industry is highly localised and has peculiar and complicated needs which require a mono technic

Technical education is to be organised on an All India basis under the guidance of a National Council for Technical Education.

8. The Employment Bureau

Manufacturers of goods take a good deal of trouble to find a market for their goods, but not our Universities, even when they turn out the most valuable of all of a country's products

—men. The Report of the Central Advisory Board of Education says : "Hardly anything is done to advise parents as to the occupations for which their children are most fitted or to place those leaving school or college in suitable posts."

The Employment Bureau is to be regarded as an integral part of the educational administrative service. Its main functions may be thus summarised :

(*a*) To establish contacts with schools and to advise parents and head teachers as to the occupations which school leavers should seek to enter. This will be determined by the openings for employment available in an area and the ability and aptitude of the leaver concerned as shown by school record, and other tests.

(*b*) To establish contact with employers of labour. The available openings in an area and the essential qualifications for filling them are to be ascertained. Employers are to be persuaded to recruit their employees through the Employment Bureau. As far as possible blind-alley occupations are to be avoided.

(*c*) To arrange for the after-care of young workers, or to deal with misfits.

(*d*) To establish and supervise, in co-operation with employers, regular systems of apprenticeship in trades for which these are suitable.

It is estimated that the Employment Bureau will have to deal with 52 million leavers from Middle Schools and 12 million leavers from High Schools. The cost of the Employment Bureau, has been calculated at the rate af Re. 1 per school leaver, or Rs. 64,00,000 annually. The cost will increase by including leavers from the University in the purview of the Employment Bureau. There is no good reason for ignoring them.

9. Industrialisation the only Solution of Educated Unemployment.

Until we know that Government will energetically pursue a policy of industrialisation after the war, the post-war demand for technical education must remain problematical.

The problem of educated unemployment is easy of solution in a country with almost unlimited scope for industrial expansion.

It has been estimated that an investment of a crore of rupees in factory industries creates employment for about 500 men for direction and supervision. More industries mean more jobs for educated men.

A good example is the sugar industry, which was of little importance before the grant of protection to the industry. At present the sugar industry gives employment to 120,000 workers, in addition to about 3,000 graduates and technical men.

Not only the character, but the aim of education should change. Education should be made subservient to economics that is, education must form an integral part of economic planning, and should be so designed as to promote the objects of economic planning. We are not rich enough to afford the luxury of education for its own sake.

According to a critic of Bolshevism, education in Russia "no longer aims at producing an educated man. Its object is to turn out an officer in the proletarian army, capable of taking an active part in the civil service, industry or finance.* This means that education in Russia has a practical aim. .

---

* *Theory and Practice of Bolshevism*, by W. Gurean, p. 154.

CHAPTER VI

RAILWAYS

Railways, till the beginning of rail-road competition to which we shall refer later, were the only means of rapid land transportation. They play a vital part in the movement of goods within a country, and thus have a most important bearing on the economic development of a country.

The railway is also a means of famine protection. The heavy mortality in famines in the pre-railway days was principally due to the difficulty of moving grain to the famine-stricken areas. The difficulties of the consumer during the war have been aggravated by the reduction in transportation facilities for ordinary purposes. Better transportation facilities might have saved some lives in Bengal in 1943.

The railways have helped in the consolidation of political power. Railway construction was started in India simultaneously from several points and all considerations of cost were disregarded. The object was to link up the three Presidencies, with a view to facilitating the movement of troops from one part of the country to another. This aim was steadily pursued, and by 1872 trains were running between Lahore and Calcutta; Lahore and Bombay; Bombay, Allahabad and Calcutta; and Lahore, Bombay and Madras.

Our exports consist mostly of raw products and imports of manufactured goods. Railway policy has stimulated this development. The Indian Industrial Commission drew attention to the favourable rates for raw produce moving to the ports and imported manufactured articles moving up country from the ports. The effect of such railway rates has been to discourage Indian manufacturing industries. As an example the Industrial Commission quoted the case of hides : the port rates were 50 per cent less than the internal rates, which discouraged Indian tanning. "It would be easy to support the statements made above," the Commission added, "by numerous instances; but the facts are generally admitted."*

---

* ***Report*****, para. 271.**

The result of railway policy has been the congestion of industries in port towns. The Commission, with the object of encouraging the diffusion and decentralization of industries, recommended the adoption of the principle in railway rating that "internal traffic should be rated as nearly as possible on an equality with traffic of the same class over similar distances to and from the ports."

Complaints were made not only to the Industrial Commission but to the Acworth Committee and the Fiscal Commission that Indian industries had to pay unfair rates both on their raw materials transported from other parts of India and on their manufactured articles despatched to the various markets. As may be expected, the railway authorities believe that the complaints are largely unfounded. The Fiscal Commission thought otherwise.[†]

Our railway system has not developed naturally, like the English system, according to the requirements of internal trade and industry. According to Captain Voigt, the colonial relation between India and England furnishes the key to Indian railway policy in the past as well as the present.[‡]

The Wedgewood Committee refer to the unpopularity of Indian railways. "We would almost say that they are the most unpopular institutions in India." (*p.* 113). The reasons are not difficult to understand.

1. Government and Indian Railways.

Of the important railway lines, five are owned and worked by the State; five are owned by the State but worked on its behalf by Companies enjoying a guarantee of interest from the Government §; two important lines|| and many others are owned by private Companies, some of which are worked by the Companies, while others are worked by the State or by the Companies which work State-owned systems; several minor lines are the property of District Boards, or enjoy guarantee of interest by such Boards.

---

† ***Report***, para 272.

[1] ***Report of Fiscal Commission***, para 127.

‡ ***Staat and Eisenbahnwesen in British-Indien***, **concluding remarks (Julius Springer, Berlin, 1925).**

§ The North-Western, Eastern Bengal, East India (amalgamated with the Oudh and Rohilkhund Railway from the first July 1925) and Great Indian Peninsula and Burma Railways are owned and worked by the State. The Bengal-Nagpur, Assam-Bengal, Bombay Baroda and Central India, Madras and Southern Mahratta, and South Indian Railways are owned by the State but worked on its behalf by Companies.

|| The Bengal and North-Western and Rohilkhund and Kumaon Railways.

Over all lines in British India, however, the Government of India exercise general powers of control; they have also a financial interest in all Railway Companies in British India, and a preponderating interest in most of the important railways.

Railway construction started in 1849 when a contract was made with the East India Railway Company for the construction of an experimental line of 100 miles from Calcutta to Mirzapore or Rajmahal, the East India Company guaranteeing a return of 5 per cent on the capital invested; a similar contract was made in the same year with the Great Indian Peninsula Railway for a line from Bombay to Kalyan. The question was considered whether railways should be constructed by the State directly, but Lord Dalhousie held the view that railway construction was not one of the functions of government, and in 1854 the policy of entrusting the work to Companies enjoying a guarantee of interest was adopted. Contracts were made with several Companies between 1854 and 1860 by which the East India Company (or the Secretary of State), besides providing land, guaranteed interest on the capital at 4½ to 5 per cent (according to the prevailing market rate of interest); it was also agreed that half of any surplus profits earned was to be used towards repaying the Government any sums by which it had made good the guarantee of interest; the remainder was to belong to the share-holders. The railways were to be held by the companies on leases terminating at the end of 99 years, but the Government reserved to itself the right of purchasing the lines after 25 or 50 years.

The guarantee system did not prove very economical, and in 1862 an attempt was made to promote railway construction by means of subsidies, instead of a guarantee of interest. The system was further developed in 1864. The subsidy took the form of an annual payment for 20 years at a rate not exceeding £100 per mile of line, with an addition in respect of bridges costing more than £10,000. The subsidies, however, failed to attract capital; the two unguaranteed companies that had been formed in 1862 were later given a guarantee of interest. It was recognised in 1869 that unguaranteed Companies could not be expected to play any important part in the development of Indian railways.

Two changes were now made in Government policy in regard to railway construction. (1) It was arranged with some of the most important of the guaranteed Companies that half of the surplus profits for each half-year should be the property of the Government. This was a more profitable arrangement from the point of view of the Government than the old provision regarding the division of surplus profits. (2) The Government decided to construct railways itself. For several years after 1869 no fresh contracts with guaranteed Companies were made except for small extensions.

By the end of 1879 India had 8,303 miles of railway, of which 6,128 miles had been constructed by Companies at an approximate cost of £97,872,000 and 2,175 miles by the State at a cost of £23,695,226.

In 1880 the Strachey (Famine) Commission urged the necessity of a rapid extension of the railway system. In view of the difficulty of borrowing large sums directly by the State for the purpose, the Commission recommended a re-trial of the guarantee system under conditions more favourable to the State. Several Companies were formed after 1880 with a guarantee of interest, but in each case the terms of guarantee given to the Companies were more favourable to the Government than in the case of the first guaranteed Companies. For example, the government guaranteed 4 per cent interest to the Indian Midland and Bengal-Nagpur Railway Companies, but the Secretary of State was entitled to three-quarters of the surplus profits in excess of all interest charges.

The Government has freely exercised the right that it had reserved to itself of terminating the contracts of the railway Companies. In some cases the lines purchased have been transferred to State management (the Eastern Bengal, the Oudh and Rohilkhund, and Sind Punjab and Delhi lines for example). In other cases the lines were acquired and placed under the management of other Companies with which they were amalgamated (the Madras and the Indian Midland lines); in still other cases the old Company management was allowed to continue but more favourable terms were secured for the State by the reduction of the amount of the Company's capital, reduction of the rate of guaranteed interest and modification of the clauses relating to the division of the surplus profits. This method was adopted also in the case of East India and the Great Indian Peninsula Railways, besides other lines, but these two lines, on the termination of their contracts in December, 1924, and June, 1925, were transferred to State management.

The total mileage open to traffic at present is about 43,000.

2. Indianisation.

A policy of Indianisation of the superior services is being pursued. The Lee Commission recommended that recruitment in India should be advanced as soon as practicable to 75% of the total number of vacancies in the Superior services. The following statement shows the number of railway employees by communities :

		1936	1942
European	.	3,219	1,934
Hindus	...	5,04,977	5 38,893
Muslims	..	1,55.439	1,72,519
Anglo-Indians	.	13,423	12,242
Sikhs	...	8,710	8.785
Indian Christians	...	16,821	20,040
Other Communities	...	9,712	3,[illegible]61

3. Separation of Railway finance from the General Finances of the Country.

The separation of the railway budget from the general budget was unanimously recommended by the Railway Committee. "We do not think," they said, "that the Indian railways can be modernised, improved and enlarged so as to give to India the service of which it is in crying need at the moment, nor that the railways can yield to the Indian public the financial return which they are entitled to expect from so valuable a property, until the whole financial methods are radically reformed. And the essence of this reform is contained in two things : (1) the complete separation of the railway budget from the general budget of the country, and its reconstruction in a form which frees a great commercial business from the trammels of a system which assumes that the concern goes out of business on each 31st March and recommences *de novo* on the 1st of April ; and (2) the emancipation of railway management from the control of the Finance Department."

Under the old system the net receipts from the State railways (worked by State and by Companies) formed part of the general revenues of the country, out of which allotments, varying from year to year, were made for capital expenditure. The Mackay Committee of 1907 emphasized the need for adopting a steady annual rate of capital expenditure which could be maintained even in times of difficulty, and they suggested Rs. 18'75 crores as a standard.

The stoppage of railway development during the Great War was inevitable, but even in pre-War years the allotments were below the standard recommended by the Mackay Committee. The consequences to railways of this policy were serious: "There are scores of bridges with girders unfit to carry train-loads up to modern requirements; there are many miles of rails, hundreds of engines, and thousands of wagons whose rightful date for renewal is long over-past."[*]

The main objection to the old system was that the whole of the excess of railway revenue over expenditure in years in which expenditure was low was utilised for the general purposes of the Government, and no reserve was kept for the railways.

The Acworth Committee unanimously recommended that the whole of railway receipts, after paying the working expenses and interest on capital borrowed by the State for railway purposes, should be at the disposal of the railways, to be devoted to new capital requirements (whether directly, or as security for new debt incurred) or to reserves, or to be utilised in the form either of reduction of rates or improvement of service.

With effect from the year 1924-25 the railway budget was separated from the general budget. Under the convention adopted by the Assembly in September, 1924, the railways make a fixed contribution to the general revenues equal to 1 per cent on the capital at charge of commercial lines *plus* one-fifth of the surplus profits of the penultimate year. In addition to these payments the railway revenues have to pay one-third of the excess over 3 crores of any surplus remaining to the railways after the payment of the fixed contribution as explained above.

The interest on the capital at charge of, and the loss in working strategic lines is borne by the general revenues.

4. Indian Railways in the Depression.

In the period of 5 years ending 1928-29 the average annual contribution of the railways to the general revenues was about

---

[*] *Acworth Report*, para. 68.

6 crores. In this period the net revenue of the railways exceeded the interest charges each year by 9¾ crores on an average. In the year 1929-30, net revenue was still greater than interest-charges, but only by 4·04 lakhs, and therefore the contribution to the general revenues of 6·12 lakhs was paid by drawing on railway reserves for the difference. From 1930-31 to 1936-37 interest charges each year exceeded the net railway revenue. The railways paid a contribution of 5·74 lakhs to the general revenues in 1930 31 ; nothing after that until 1937-38.

At the end of 1936-37 the unliquidated liabilities of the railways amounted to 61 crores, of which 30¼ crores represented the amount borrowed from the depreciation fund and 30¾ crores unpaid contributions to general revenues.

The railways took steps to improve earnings and reduce working expenses, the most important of the steps being: the introduction of cheap fares to stimulate traffic, particularly in competitive areas, and special reductions in freight rates for parcels and goods traffic ; improvement of arrangements for booking traffic by the organisation of street collection and delivery of parcels and goods in some of the larger towns ; formation of research organisations on certain railways to encourage the development of new traffic, to assist in the development of areas and to organise special tours etc. ; reduction of expenses through the pooling of railways resources at certain joint stations and in other ways ; and mechanical improvements, *e.g.*, pooling of locomotives, obtaining increased mileage from engines and condemning engines and railway stock without replacement.

The railways obtained the services of Mr. Pope, of a British Railway, to ascertain whether further economies were possible on the Indian railways. As a result of Mr. Pope's visit, small organisations have been created on the more important railways to conduct detailed investigations known as 'job analysis.' These investigations cost money, but are the means of effecting economies much greater than the cost. In addition, Mr. Pope suggested directions in which railway earnings might be increased, *viz.*, improved publicity work ; increased efforts of salesmanship ; closer study of exports, imports and markets ; and more elasticity in the quotation of rates and fares.

The Wedgewood Committee of 1937, consisting of three foreign experts, also considered measures to increase revenue.

The Committee found Indian railways ill-equipped on the commercial side, that is, in regard to creating and developing traffic, securing and maintaining friendly relations with the traders, and of cultivating good public relations generally. The Committee describes the functions of the 'Industrial Agent', who is employed on several of the British railways. The business of the Agent is to attract new factories to the areas served by the railway he represents. He keeps a detailed register of all industrial sites available and gets into touch with firms or individuals who are contemplating the erection of new works or premises.

At the time when the Committee met, the Committee did not favour a general increase in rates and fares. Three conditions were laid down under which such an increase might be justifiable :

(*a*) As an emergency measure.

(*b*) To meet a general change of costs and price levels of a more or less permanent character.

(*c*) To meet a temporary increase of costs in a period of general prosperity and higher prices.

5. State versus Company Management.

The question of the future management of Indian railways was considered by the Acworth Committee of 1920-21 but, unfortunately the recommendations of the Committee on the subject were not unanimous. The President and four of the members recommended State management and the other five members management by Companies domiciled in India. In February, 1923, however, when the question of the future management of the East India and Great Indian Peninsula Railways was debated in the Legislative Assembly, the non-official Indian members were able to carry a Resolution recommending the placing of the two lines under State management at the close of their contracts. This has been done, but the policy of State management of railways has not been accepted by the Government. The Government view is thus explained in the Railway Administration Report for 1922-23 : "The Government of India, however, expressed themselves as being so convinced by the almost universal failure of this method [State management] in other countries that they proposed, while accepting the necessity for taking over the management of the East India and Great Indian Peninsula Railways, to continue their efforts to devise a satisfactory form of Company domiciled in India to take these Railways over eventually on the basis of real Company management" (para. 14).

Real Company management is, however, impossible in India. A company can effectively manage a concern when the money invested is its own and when it enjoys undivided responsibility for management. In the case of the more important lines, however, the greater part of the capital was found by the Government. The Government is the real owner, and it cannot hand over its property to a Company to be managed as the Company pleases.

Company management under Indian conditions means a division of responsibility which does not make for efficiency. It may be possible to show that Company management has suceeeded in other countries and that State management has failed, but there is general agreement in India with the view expressed by the Government of India in a Despatch to the Secretary of State that there is really nothing to choose between a Company managed line in this country and one under State management."*

Further, Indian public opinion is overwhelmingly in favour of State management, and Indian opinion on such a question is entitled to weight.

The Wedgewood Committee recommended a fresh examination of the possibility of creating privately managed companies with Boards of Management domiciled in India, thus supporting the Government point of view. They point out the drawbacks of State management. There is a cramping of initiative, there is enormus amount of routine correspondence, and inspection and supervision in connection with the expenditure of public money diverts the attention of officers from work of greater importance.

6. A Federal Railway Authority.

The Government of India Act, 1935, envisages the creation of a Federal Railway Authority when the Federation is inaugurated. The executive authority of the Federation in respect of the regulation and the construction, maintenance and operation of railways will be exercised by this Authority.

Three out of 7 members of the Federal Railway Authority will be nominated by the Governor General 'in his discretion',

---

**Acworth Report*, para. 280.

A member of the Authority will also be nominated by the Governor General 'in his discretion' to be President.

The Federal Railway Authority, in the discharge of their duties, shall be guided by such instructions on questions of policy as may be given to them by the Federal Government.

The Federal Railway Authority may become the means of realising the advantages of State management under more favourable conditions.

The Wedgewood Committee emphasize the need of easing the initial burden of the Federal Railway Authority. The Authority may first tackle the State managed systems of India.

Three other recommendations were made by the Wedgewood Committee on the subject of the Federal Railway Authority.

1. Political interference in the management of the railways is to be avoided. Political interference "is the high road to bankruptcy."

2. Administrative interference is to be avoided. It leads to stagnation. The new Authority should be allowed a free hand to manage its own affairs.

3. The technical management of the railways should be left to the Railway Board and the existing railway administrations.

The Federal Railway Authority will correspond in its functions to the Board of Directors of a large commercial concern.

7. Rail-road Competition.

Motor transport has developed rapidly since 1925-26. In that year the number of omnibuses imported was 6,343. The number rose to 15,306 in 1929-30. It fell thereafter and was smallest in 1932-33—2676. With the improvement of trade it rose to 9,973 in 1934 35 and 15,077 in 1937-38. At first competition with the railways was confined to short distances. But recently motor buses are carrying both passengers and goods over long distances as well in direct competition with the railways.

The competition is keeeest over short distances and, according to the railways, unfair. It must be uneconomical for motor buses. For example, passengers were carried to Amritsar for 4 annas, which is equal to about 1½ pies per mile.

Some time ago the whole question was examined by a small expert committee. The committee on the whole agreed with the railways that public motor vehicles were not adequately inspected, that they were systematically over crowded, that the motor transport industry was subject to no Hours of Work rules, that the drivers of motor vehicles were not so carefully examined as to their capabilities like the railway operating staff, that the same attention was not paid to accidents to public motor vehicles as to railway accidents, and that the motor transport industry was not subject to obligations such as those imposed on the railways by the Railway Act.

Control over motor vehicles has been made stricter.

The utility of buses where railway service is inadequate is obvious. "But," wrote the Committee, "where the advantage of motor transport over the railways is only slight, the community cannot, at the present stage, afford both" (p. 24). One must agree with the Committee that both rail and road transport have their appropriate field. The problem is that of confining each to that field.

It has been suggested that a motor bus service should not be allowed to run in direct competition with the railway or that no bus should be allowed to start, say, within two hours before or after the departure of any train. That might suit the railways but it would not suit the motor bus service. It must also be admitted that, in spite of its inconveniences, the motor bus service is of real use to the poorer classes of the travelling public. It is also due to the new competition that railways are paying more attention to the comforts of III class passengers than they ever did before.

Sir Thomas Stewart, in introducing the railways budget for 1939-40, explained the railway rate policy under the new conditions of rail road competition. In particular areas the railways are compelled to quote special rates, but it is not possible for the railways to meet road competition by a reduction of all rates. Railway rates are based largely on the principle of 'what the traffic can bear.' 'The position of the railways was roughly this, that what we lost on the roundabouts, we make up on the swings.' The traffic as a whole pays the cost as a whole. But road competition has 'disturbed the harmony and balance of the railway rate system.' The new competitors 'own swings but contract no losses on the roundabouts.' The situation cannot be met by a general reduction in all rates. Railway rates in India are low, 'the average rate per ton being the lowest in the world.' Another point which Sir Thomas Stewart made is that the profits earned by the railways do not enrich any private capitalist. They go into central revenues and are utilized to give relief to the general tax-payer and to assist provincial administrations.

In the rail-road competition, the railways enjoy two advantages. First, they are largely State-owned or State controlled, while road transport companies are in private hands. Secondly, railways have proper sites for their tracks which are, in general, in excellent condition. For motor traffic there is not only an inadequacy of roads, but such roads as exist are 'of a deplorably low standard.' In the opinion of experts if "India's 300,000 miles of road were re-constructed on the model of the great German Reichsutobahnen (motor roads), motor transport would destroy rail transport within a decade" (*Capital* Jubilee No., 1938, p. 109).

To meet road competition certain counter measures were recommended by the Wedgewood Committee. The annual loss caused to railways by this competition is estimated to be Rs. 4½ crores. The Wadgewood Committee wrote : "If adequate steps are not taken to co-ordinate road and rail transport we should regard an increase of 100 per cent. on the existing losses as being well within the probabilities of the case". (p. 102)

The more important counter-measures are :

1. Faster passengers trains, not faster first class service.
2. Railway connections should be overhauled and improved.
3. Services should be intensified in suitable sections (*e.g.* Lahore-Amritsar.)
4. More attention should be paid to amenities for lower class passengers (Intermediate and Third) who provide about 92% of the passenger revenue of the Indian railways.

The Committee did not recommend a general reduction of fares to meet road competition.

In regard to goods traffic there is need for faster goods trains ; more expeditious handling of goods at sending, tranship and receiving stations ; simplification of clerical formalities and development of collection and delivery services. A general reduction of rates to meet road competition would involve the railways in a heavy loss of revenue and is not to be contemplated. Individual rates may be lowered.

CHAPTER VII

FOREIGN TRADE AND TARIFFS

The foreign trade of a country is a very good index of the economic activities of the people. Agriculture is the main occupation of the people of India this is shown not only by the occcupational census but by the character of our foreign trade.

The following statement shows the proportion of articles mainly or wholly manufactured to our total imports and exports in certain years

	Mfd. Imports Crores	Total Imports Crores	Per cent	Mfd Exports Crores	Total Exports Crores	Per cent
—						
1928-29	180	253	71	90	330	27
1931-32	84	126	66	43	156	28
1934-35	95	132	74	39	151	26
1935-36	99	134	74	42	161	26
1936-37	92	125	74	50	196	26
1937-38	108	173	62	55	181	30
1938-39	93	152	61	48	163	29

The figures for 1937-38 and 1938-39 are exclusive of Burma.

The character of our foreign trade is evident from these figures Jute manufactures represent more than half of the total value of manufactured exports

While both imports and exports have much increased during the past sixty years, their general character has remained unchanged.

1. Foreign Trade in Mughal times.

The character of our foreign trade in the 16th and 17th centuries was essentially different The bulk of the exports consisted of cotton manufactures, the imports chiefly consisted of gold and silver, a few articles of luxury and fancy goods meant for the rich, and spices.

Let us first consider the imports. In his *Remonstrantie* or report on Surat, dated 22nd October, 1615, Pieter Gielis van Ravestejin gives an interesting list of articles imported for Akbar from England. His object was to indicate to the authorities in Holland the nature of the demand for foreign goods at the Court. The list includes fine swords and knives which will cut through iron ; satin and velvet of various colours ("but no black," for Van Ravestejin thought they could not be sold at a profit) ; fine woollen cloth, green, yellow and crimson ; 3 or 4 pieces of men's and women's clothing each of a different fashion ; all kinds of oil paintings, landscapes as well as portraits ; a small quantity of perfumed leather ; mirrors of full man's size ; parrots, cockatoos and other pet birds ; Japanese weapons ; ornamented copper candle stands ; ornamented, genuine glass, and table service inlaid with gold ; 3 or 4 watches (hour-glasses) of metal and crystal ; breast plates, arms such as spikes and matchlocks.

And Van Ravestejin added : "Various other curiosities, not of great value, would be welcome and 5 or 6 good sleuth-hounds and some powerful hunting dogs, who would not be afraid of fighting leopards and tigers."[1]

The imports into the principal ports on the Coromandal coast, *viz*., Tegnapatam or Pulicat, Petapoly (Nizampatam) and Masulipatam, where the Dutch had factories, were as follows : pepper ; mace ; nutmegs ; cloves ; sandalwood ; aloes-wood ; lead ; sulphur ; alum ; raw silk from Aitchyn and from China ; twisted silk from China ; silk manufactures "but little in demand"; musk : vermillion : quicksilver ; camphor from China as well as from Borneo but the latter was most in demand): tin; crimson woollen cloth; crimson kerseys ; Chinese rolled damask ; Chinese gold wire ; tinsel, tortoise-shell rubies ; Chinese lacquer-work and some fancy goods. There was some demand for porcelain in Petapoly, which is explained by the presence of Persian merchants "who eat from porcelain-ware, but not the Hindus."[2] If we add gold and silver, and horses from Iraq and Arabia, we have a fairly complete picture of imports into India three or four centuries ago.

It will be seen that with the exception of spices and one or two other articles, the imports chiefly consisted of articles of luxury meant for the rich. According to Moreland, " the masses of

---

[1] Terpstra, *Westerkwartieren*, 215.

[2] Schorer's account of the Coromandal coast dated 1606.

Indian consumers were too poor to buy imported goods."[3] But the masses of consumers, whether in India or elsewhere, are always too poor to buy imported articles of luxury. The character of the import trade is explained by the self-sufficient character of India of the past. The terrible machines which have transformed European industry and ruined Indian weavers and other hand-workers, had not yet been invented, and our craftsmen were unbeaten in their art.

2. Cotton Weaving.

It has been said above that cotton goods formed the bulk of our exports in the 16th and 17th centuries. Cotton weaving was one of the main occupations of the people, and as an industry it was even more important than agriculture, for while agriculture supplied the needs of the population (exports of agricultural produce were for the most part unimportant), the cotton industry produced cloth not only sufficient to clothe the masses of India but for export.

The whole world was a market for the products of this national industry.

Cotton weaving is a very ancient Indian industry. From the accounts of the Greeks who accompanied Alexander the Great on his expedition to India it appears that the art of weaving was highly developed in India in the 4th century before Christ, and produced the finest goods[4]. Cotton goods were exported to Greece where they were known as Gangetika.[5] From very early times then, down to the 16th and 17th centuries, the industry continued to grow and prosper ; nor did its growth and prosperity cease under the Moghul kings.

The importance of the exports of cotton goods may be judged from the following references to the trade (selected from a great many) in the accounts of contemporary European travellers.

Duarte Barbosa (Portuguese) thus refers to the ships from Cambay that he saw (1514) at Aden : "And these ships of Cambay are so many and so large, and with so much merchandise, that it is a terrible thing to think of so great an expenditure of cotton stuffs as they bring."[6]

Barbosa mentions the sacking of Mombasa by the Portuguese a few years earlier (15th August, 1505). A fuller account

[3] *From Akbar to Aurangzeb*, p. 53.

[4] Lassen I, 295. (*Indische Alterthumskunde*).

[5] *Ibid*. II, 24.

[6] *The Coasts of East Africa and Malabar*, 28.

based on original sources is given in a recent publication.[7] When the invaders stormed the King's palace, they found there large quantities of cotton goods from Cambay which, says Huemmerich, provided clothing for the whole of the East African coast.

Cotton goods were made all over India, but there were three great centres of the export trade. Cambay supplied places to the west of India, countries to the east were supplied from Coromandal and Bengal. The importance of exports from the Coromandal coast may be judged from the following statement contained in a letter dated June 1612 from Hendrik Brauwer (later Dutch Governer-General) to the Director of the Dutch East India Company "The coast of Coromandal is the left arm of the Moluccas and the islands round about, because without cloth imported from Coromandal, trade would be dead in the Moluccas."[8]

The demand for cotton goods made on the Coromandal coast was not limited to the places in the East frequently mentioned in the early Dutch reports, *viz*., Atechyn, Priaman, Queda, Perac, Sumatra Java, Malaya, Patane, Moluccas, Banda, Borneo, Celebes, Solor, Boreia, Bantam, Amboina, Siam, Pegu, Tenastarim, and Arakan. It was wider. A Resolution of the General Council at Bantam, dated 3rd December, 1610, refers to "cloth and other goods which have been ordered from the coast of Coromandal for the Moluccas, Java and the Fatherland."[9] Already in 1610 there was a keen demand in Holland for Indian goods.

In one of the earliest manuscript accounts of the east coast, for the year 1607-08 preserved in the Dutch Records Office at the Hague,[11] there is another interesting reference to cotton goods. It appears that the Dutch experienced difficulty in buying red cotton cloth through the usual middlemen in Petapoly, the reason being that the trade was controlled by the King of Golcanda, in whose jurisdiction Petapoly lay, who had agreed to supply the King of Persia every year for his army several thousand pieces of red cotton stuffs. The goods must have been exported to Persia by sea.

---

[7] Huemmerich (*Die erste deutsche Handelsfahrt nach Indien*, 1505-06). P. 61.

[8] Heeres, *Bijdragen*, 154.

[9] Terpstra *Koromandal*, 173.

[10] Kol. Arch. No. 961 (Dutch Letters Received).

Nor was the demand for our cotton goods less keen in England. The exports of England grew rapidly in the first quarter of the 17th century, and demand was limited only by the want of funds. Indian calicoes were popular in England and replaced the more expensive linens imported from Holland and Germany. The conversation which the Deputy Governor (Morris Abbot) and Thomas Mun had with King James and which Abbot reported to the East India Company in August 1623, is reproduced in *English Factories*, 1624-29[11]. The King asked "what vent they had for the greate masse of callicoes [that] came yerelye. They answered that much of it is very useful and vendes in England, whereby the prizes of lawnes, cambrickes, and other linnen cloth are brought downe; for the rest England is now made the staple for that commoditie, which having first served His Majestie's dominions, the overplus is transported into forayne parts in the nature of a home bredd commoditie. The King approved exceedingly thereof, and said this was the ready way to bring treasure into his kingdome,"[12] On March 30, 1625, Abbot, who had now become Governor, told a General Court that "the commodities of Zuratt doe vend heer much better than in former tymes; for example,......callicoes......hath found such vent in forreyne parts as if the Company had 100,000 or 200,000 peeces they would bee uttered in short time."

The few extracts given above are sufficient to show the importance of cotton goods in our foreign trade, and of the weaving industry in giving employment to our workers.

Among other articles of export indigo was of some importance ; the method of its manufacture has been described by Pelsaert, W. G. de Jongh and Van Twist. Cotton yarn was exported from the Coromandal coast. In Masulipatam there was a great quantity of iron and steel, which also figured among the exports from the East coast. Among the articles of trade in Gujrat mentioned by Twist, in addition to cotton goods and indigo, we find opium, *hing*, lac, myrobolans, gambier, drugs, precious stones, alabaster and marble. Rice was exported from Bengal.

Raw silk has been mentioned above among imports. The Indian silk industry depended upon improved raw materials, and Gujrat was one of its important centres. Van Twist mentions silk goods of various colours and designs, and goods of mixed cotton and silk.

---

[11] *p. xxvi.*

[12] **Terpstra, *Koromandal*, 176,**

We may next briefly notice the nature of India's balance of trade in those days.

As at the present time, exports much exceeded imports in value. But our favourable balance of trade is now a sign of our debtor position. There is an annual drain from India of profits of important industries, which are a monopolyof, or are controlled by foreign capital. In addition, invisible imports in the shape of the services of foreign shippers, bankers and commission agents have to be paid for. We are a debtor country and we pay our debts abroad by exporting goods.

The situation was different in the past. The demand for our manufactures was keen in the markets of the world, while our demand for the manufactures of other countries was so small as to be negligible. Indian produce was exported in Indian ships manned by Indian sailors, and Indians largely earned the profits from exchange and the provision of credit needed for trade. Not only the balance of trade but the balance of payments was heavily in our favour. In other words, India was a creditor country, and the world paid her tribute in silver and gold.

3. Tariff.

While our Moghul Kings held Mercantilist views in regard to silver and gold, they did not exclude foreign goods by means of heavy import duties. The general rate of duty on imports in the time of Akbar was 2½ per cent *ad valorem*. Indian hand-industries needed no protection then and light duties were levied on imports for the sake of revenue.

Under Company rule, the general rate of duty levied on imports into India was 10 per cent *ad valorem* ; almost all goods exported were taxed at the rate of 3 per cent. The duty on imports was reduced to 7½ per cent in 1864 and 5 per cent in 1875. Duties on exports were gradually repealed and in 1875 only rice, indigo and lac were still subject to duty.

The "reform" of the Indian tariff in accordance with the principles of free trade began in 1878. The duties on a great number of articles, including some of the coarser cotton goods, were remitted in that year, and in the following year the duties on grey cotton goods except those of the finer qualities, were repealed. In 1882, with the exception of salt, all the remaining import duties were repealed.

The reasons which led the Government to abolish the cotton and other duties were not merely economic. But at the back of the mind of our administrators was the idea that such protection as the tariff afforded to Indian industries was economically indefensible. Again, free trade was the policy of the United Kingdom, and it was thought to be wrong for India to levy duties on imports when the United Kingdom did not do so. In the Financial Statement for 1878 we find the principles which governed the customs legislation of the United Kingdom, "now admitted axioms by all who recognise the theoretic advantages of free trade," held up as a model for India.

The abolition of cotton duties in 1879 met with strong opposition in the Viceroy's Council ; it was in opposition to the opinion of the majority of the Council that Lord Lytton carried out the measure.

Financial pressure compelled the Government in 1894 to reimpose the tariff of 1875 with some modifications. In December 1895 a 5 per cent duty was imposed on cotton goods and yarn imported into India, and a countervailing excise duty of an equivalent amount was imposed on cotton goods made in Indian power mills. Referring to the excise in his speech on the Cotton Duties Bill on the 17th December, 1894, Mr. Westland (Finance Member) frankly admitted that he did not recommend the measure on its own merits. The instructions of the House of Commons were that if the Government of India were obliged by financial necessity to impose a duty on cotton goods, an equivalent duty must be imposed on similar goods manufactured in India to deprive it of a protective character. Two years later the duty on yarns was removed and both the duty on cotton goods and the excise were lowered to 3½ per cent.

The Tariff Act of 1894 was amended in 1899 to check the imports of bounty-fed sugar from Germany and Austria-Hungary.

The customs tariff was completely revised in 1916. With effect from March 1, 1916, the general rate of duty was raised from 5 to 7½ per cent. and the free list was curtailed Export duties were also imposed on tea and jute. The duty on cotton manufactures was not altered, as the proposal to raise it would have revived old controversies at a time when it was necessary to concentrate all attention on the War. In the following year, however, financial reasons compelled the Government to raise the import duty on cotton goods from 4½ per cent to 7½ per cent without any change in the excise. which remained at 3½ per cent. At the same time the export duties imposed on tea and jute in 1916 were doubled.

The customs tariff was again recast in the Budget for 1921-22. The general rate was increased from 7½ to 11 per cent. and there were other changes.

Under the stress of financial necessity the customs tariff was again revised in the Budget for 1922-23. The general tariff was raised from 11 per cent to 15 per cent, but the duty on cotton goods was not altered. The cotton excise was abolished in 1926.

At the outbreak of the present war the general rate of the tariff was 25 % *ad valorem*. Export duties were levied on jute (raw and manufactured) and rice. Protective duties were levied on the following articles : sugar ; heavy chemicals ; iron and steel; silver ware ; thread and other manufactures : cotton manufactures ; silk fabrics ; artificial silk fabrics and fabrics of artificial silk mixed with other materials ; matches, match splints and veneers.

4. Imperial Preference.

The question of Imperial preference was first officially considered by India in 1903. Britain sought protection in our markets because of the increasing competition she met from Japan, Germany and the United States.

Sixty years ago the share of the United Kingdom in our total trade amounted to more than 60 per cent. "The flow of trade with other countries," says the Review of the Trade of India for 1884-85, " in comparison with that between England and India, is of little significance." The United Kingdom, then, was the only country which extensively manufactured goods adapted to our requirements, and she met with little competition in our markets either from home industries or foreign manufacturers.

Percentage share of certain countries in India's foreign trade.

	1871-72 to 1875-76	1913-14	1931-32	1938-39*
Imports.				
U. K. ...	77·9	64·2	35·4	30·7
Germany ...	0·1	6·9	8·0	8·5
U.S.A. ...	0·3	2·6	10·1	6·4
Japan ..	0·0	2·6	10·5	10·1
Exports.				
U. K. ...	49·6	23·5	27·5	33·7
Germany ...	0·3	10·8	6·6	4·7
U.S.A. ...	3·5	8·9	8·9	8·5
Japan ...	0·0	9·3	8·7	9·0

Taking imports and exports separately, in the five years 1871-72 to 1875-76 no less than 77·9 per cent of the total imports came from the United Kingdom, the share in the import trade of Germany, Japan and the United States being negligible. For 1913-14, the figure for the United Kingdom is 64·2 per cent.

The Review of the Trade of India for 1884-85 notes that about that time our direct trade with France was of greater value than that of any two other European countries combined. At the present time, Germany, the United States of America and Japan have each a larger share in our total trade than France.

From practically nothing sixty years ago the share of these countries in our imports increased steadily till the outbreak of the Great War. Germany lost ground in the War and the post-War period, but what Germany lost, the United States, and particularly Japan gained.

Considering the heavy decline in the demand for British goods it is not surprising that British manufacturers should have thought of Imperial Preference as a means of stimulating this demand.

Lord Curzon's Government rejected Imperial preference because of the danger of retaliation on the part of foreign countries. The greater portion of our exports, they pointed

---

***Including Burma.**

out, "compete successfuly in foreign markets by reason of their cheapness rather than of their quality or kind" (Letter to the Secretary of State, dated 22nd October, 1903).

The question of making the British Empire self-sufficient was seriously considered during the War. The Imperial War Conference, 1917 passed the following Resolution :

"The time has arrived when all possible encouragement should be given to the development of Imperial resources, and especially to making the Empire independent of other countries in respect of food supplies, raw materials, and essential industries. With these objects in view this Conference expressed itself in favour of :—

"(1) The principle that each part of the Empire, having due regard to the interests of our Allies, shall give specially favourable treatment and facilities to the produce and manufactures of other parts of the Empire.

"(2) Arrangements by which intending emigrants from the United Kingdom may be induced to settle in countries under the British flag."

The United Kingdom adopted the policy of preference in 1919. Without altering its general tariff policy she granted to the whole Empire preferential rates, which were usually five-sixths or two thirds of the full rate, on nearly all articles on which import duties were levied.

In India, the Imperial Legislative Council adopted a resolution in February, 1920, for the appointment of a Committee to report 'whether or not it is advisable to apply to the Indian Customs Tariff a system of preference in favour of goods of Empire origin.' This led to the examination of the whole question by the Indian Fiscal Commission (1921-22).

4. The Fiscal Commission.

The general conclusions of the Fiscal Commission on the question of preference are summarised below :—

Indian exports are not of a kind to benefit appreciably from preference : "The economic advantage derived from a preference tends to be more important in the case of manufactured goods than in the case of raw materials. Manufactures nearly always meet with keen competition in foreign markets and therefore a preference on manufactures is nearly always of value. The position in regard to raw materials is different" (Para. 233).

2. India could not grant extensive preferences without serious loss to herself. The Commission were chiefly thinking of the cost to the consumer. In regard to retaliation, the Commission thought that there was not much danger to be feared on that score.

The Commission laid down the following three principles which were to govern the application of a policy of preference:

1. No preference was to be granted on any article without the approval of the Indian Legislature.

2. No preference given was, in any way, to diminish the protection required by Indian industries.

3. Preference was not to involve any appreciable economic loss to India after taking into account the economic gain which India derives from the preferences granted her by the United Kingdom.

The Commission duly emphasized the Imperial aspect of the question :—

"We do not forget that the United Kingdom is the heart of the Empire, that on its strength depends the strength and cohesion of the Empire, and that its strength is bound up with the prosperity of its export trade, which has enabled a small island to find the resources which bind together and uphold the great Commonwealth of Nations known as the British Empire. Unless the United Kingdom maintains its export trade the Empire will weaken, and this is a contingency to which no part of the Empire can be indifferent. Nor again do we forget that the communications of the Empire are guarded by the British Navy, and that the burden of maintaining the essential services falls almost entirely on the people of the United Kingdom." [Para. 260].

Public opinion in India was thoroughly hostile to Imperial Preference in 1921-22, and it remained hostile when the Ottawa Trade Agreement was concluded. It had been made clear as far back as 1902 that the object of Imperial Preference was not to establish free trade within the Empire—the Dominions would never have agreed to Imperial free trade. But the Indian mercantile community feared that preference would operate to weaken the protection granted to Indian industries, that it would place a heavy burden on the Indian consumer for the benefit of British industries, and that it would affect India's fiscal autonomy. In recent years before the war public sentiment in regard to preference had undergone a change. This was on account of the emergence of a new order in international trade which made it vital for India, in the interests of her export trade, to gain and retain the good will of Empire customers, even if it meant burdening Indian consumers with higher cost of imported goods.

Reference has been made above to Indian Fiscal Autonomy. This was the result of a Fiscal Convention according to which the Secretary of State for India did not interfere in tariff matters when the Government of India and the Legislature were in agreement. The Fiscal Convention lapsed when the Constitution Act of 1935 came into force. The need was therefore felt for imposing a special responsibility on the Governor-General to prevent penal discrimination against British imports. Discriminatory or penal treatment covered by this special responsibility includes both direct discrimination (whether by means of differential tariff rates or by means of differential restrictions on imports) and indirect discrimination by means of differential treatment of various types of products. No administrative discrimination will be permitted either.

Trade relations between India and the United Kingdom are now governed by the principle of Reciprocity, which means that we can impose no conditions upon British subjects domiciled in the United Kingdom and Companies incorporated in the United Kingdom to which Indians or Companies incorporated in India are not subjected in the United Kingdom.

There is a special application of this principle to shipping. Ships registered in the United Kingdom cannot be subjected by law in British India to any discrimination whatever as regards the ship, officers or crew, or passengers or cargo, to which ships registered in British India are not subjected in the United Kingdom.

This principle makes it impossible to reserve coastal shipping to Indian vessels.

Ships registered in India may compete on equal terms with ships registered in the United Kingdom in the British coasting trade, and in the carrying trade between the United Kingdom and foreign ports. It is extremely doubtful if this privilege that Indian shipping has acquired under the principle of reciprocity is of any great value.

5. The Ottawa Agreement.

The United Kingdom-India trade agreement was signed in August, 1932, and the preferences came into force from

November of the same year. The main terms of the agreement were the following :

No duties were to be levied on Indian goods imported into the United Kingdom which were admitted free of duty under the British Import Duties Act of 1932,

Preference of 9*s*. 4*d*. per cwt. was to be granted to Indian coffee.

The margin of preference enjoyed by Indian goods specified in schedule *C* over similar foreign goods was not to be reduced. If greater preference was granted to such goods imported from any other part of the Empire into the United Kingdom, such greater preference was to be extended to Indian goods. Schedule *C* comprised 22 articles including tea, leather (undressed hides and skins), teak and other hard woods, woollen carpets and rugs, tobacco, castor seed, groundnuts and lead.

The duty on either wheat or lead might be reduced if at any time Empire producers were unable or unwilling to offer these commodities at prices not exceeding the world prices and in quantities sufficient to supply the requirements of United Kingdom consumers.

Goods specified in schedule *D* were to be admitted free of all duty from all sources. Schedule *D* comprised the following articles : shellac, seed lac and stick lac, raw jute, myrobolans, broken rice, mica and Indian hemp. India needed no preference in respect of these goods.

Greater use of Indian cotton in the United Kingdom was to be encouraged, whether by research, propaganda or improved marketing.

India on her part agreed to grant 10 per cent preference to British imports of 158 articles and 7½ per cent preference to 5 other articles mentioned in schedule F.

Where protective duties were not imposed on goods of cotton and artificial silk, the Government of India undertook to grant 10 per cent preference to British imports of these goods.

The Ottawa Conference, in taking note of the trade agreements, recorded its conviction : "That by the lowering or removal of barriers among themselves provided for in these Agreements, the flow of trade between the various countries of the Empire will be facilitated, and that by the consequent increase of purchasing power of their peoples, the trade of the world will also be stimulated and increased."

The Conference also adopted a resolution concerning industrial co-operation between various parts of the Commonwealth. The Imperial Economic Committee on Imperial Industrial Co-operation had noted that industrial production had developed and that it would continue to develop in the less industrialised parts of the Commonwealth. "These developments," says a resolution adopted by the Ottawa Conference, "involve changes in the economic structure both of the more industrialised and of the less industrialised countries; and the Conference notes with approval the view of the Committee that 'the object of co-operation is not, and must not be, to arrest change, but wisely to direct and facilitate its course'".

In the opinion of the Conference the object of the policy of industrial co operation should be to 'secure the best division of industrial activities among the several parts of the Commonwealth and the ordered economic development of each part with a view to ensuring the maximum efficiency and economy of production and distribution'.

No scheme of such Imperial division of industrial activities has been worked out. The idea, probably, is, to safeguard the interests of British industries without unduly restricting the industrial development of other parts of the Commonwealth.

As the result of the Ottawa Agreements, the share of the United Kingdom, as well as of the British Empire as a whole, in our imports increased appreciably between 1932-33 and 1936-37. Figures for later years are not comparable on account of the exclusion of Burma.

The Ottawa Trade Agreement was terminated in 1936 and a new trade agreement with the United Kingdom came into operation from 1st April, 1939, the terms of which were more favourable to India. Preferences granted to India have proved of value in the case of groundnuts, linseed, coir yarn, mats and matting, woollen carpets and rugs, and jute manufactures. Preference in the case of jute manufactures enabled India to compete on equal terms with the British industry. With the aid of preference India ousted foreign suppliers from the British market for coir yarn, and mats and matting. The preference on tea made non-Empire competition difficult.

The duty on British cotton piece-goods was reduced from 25 to 20% in 1936 but this reduction failed to arrest the decline in the imports of British cloth. The new agreement lowered the duties to 17½ to 15½% *ad valorem* on different classes of piece-goods.

A new feature of the trade agreement was the linking of the preference for British piece-goods with the offtake of Indian cotton by the United Kingdom on a reciprocal graduated scale, India agreeing to reduce import duties if the United Kingdom took more of Indian cotton.

9. Gold Exports.

A wholly new development in our foreign trade after 1931 was the export of gold.

Traditionally India has been described as the 'sink' of the precious metals.

Van Twist in his *Generale Beschrivinghe van Indien* (1638) tells us that although there were no gold or siver mines in India, large quanties of both were imported from foreign countries, and that it was forbidden to export them. "India is rich in silver," wrote Hawkins, "for all nations bring coyne and carry away commodities for the same ; and this coyne is buried in India and goeth not out."[1] Terry estimates that an Indian ship returning from the Red Sea was usually worth two hundred thousand pounds sterling, most of it in gold and silver. "Besides," he adds, "for what quantity of monies comes out of Europe by other means into India, I cannot answere ; this I am sure of that many silver streames runne thither as all rivers to the sea, and there stay, it being lawful for any nation to bring in silver and fetch commodities, but a crime not less than capital to carry any great summe thence"[2]. Mandelslo also noted that it was "prohibited, upon pain of death, that any should transport either Gold, Silver, or coined Brass out of the Country"[3].

India imported gold heavily also from 1900-01 to 1930-31 as is shown by the table below :

Gold lakhs of Rs.

		Imports	Exports	Net imports
1900-01 to 1904-05	..	75,33	44,14	31,19
1905-06 to 1909 10	...	87,45	28,73	58,72
1910 11 to 1914-15	...	149,59	22,87	126,72
1915-16 to 1919-20	...	98,22	31,16	67,06
1920-21 to 1924-25	...	182,24	38,69	143,55
1925-26 to 1930-31	...	121,53	1,01	120,52

It is seen that imports of gold exceeded exports by about 548 crores of rupees. The import of gold came to a sudden end when England abandoned the gold standard and we linked the rupee to sterling.

---

[1] Foster, *Early Travels in India,* p. 112.

[2] Foster, p. 302.

[3] *Travels into the Indies,* p. 68.

This movement of gold from India was entirely unexpected. The Gold Delegation of the Financial Committee of the League of Nations thus speculated about the Indian demand for gold in the depression :

"No doubt the present economic depression may result in some temporary weakening of the Indian demand ; on the other hand, it is quite possible that the recent decline in the price of silver will lead to increased purchases of gold. We understand that attempts are being made to extend banking and investment habits in India, but we do not think it would be safe to anticipate any material reduction in the Indian demand for many years to come" (Interim Report, p. 14).

After 21st September 1931, no remarkable change in banking and investment habits occurred in India. But we not only suspended our purchases of gold, but were selling gold to the world on an unprecedented scale.

The value in rupees of exports of gold between 1931-32 and 1939-40 is shown below (later figures not available).

[See Fig. 25 on *p.* 168.]

	Net exports of gold. in Lakhs of Rs.
1931-32	57,97
1932-33	65,52
1933 34	57,05
1934-35	52,54
1935-36	37,36
1936-37	27,85
1937-38	16,33
1938-39	23,26
1939-40	44,64
	382,52

10. The Price of Gold.

We were tempted to sell gold by the rise in its price. Why did the price of gold rise ?

The lowest London New York cross-rate (dollars to £ sterling) in September 1931 was 3 60 (parity 4·866 dollars to £ gold). This signified a rise of about 35 per cent in the price of dollars in terms of the British paper £.

The Mint price of gold in England per fine *oz.* was £4-4-9¾. The highest price of gold in September 1931 was £5-14-9. The rise in the London price of gold was about equal to the depreciation of the paper £ in terms of the dollar (35·3%).

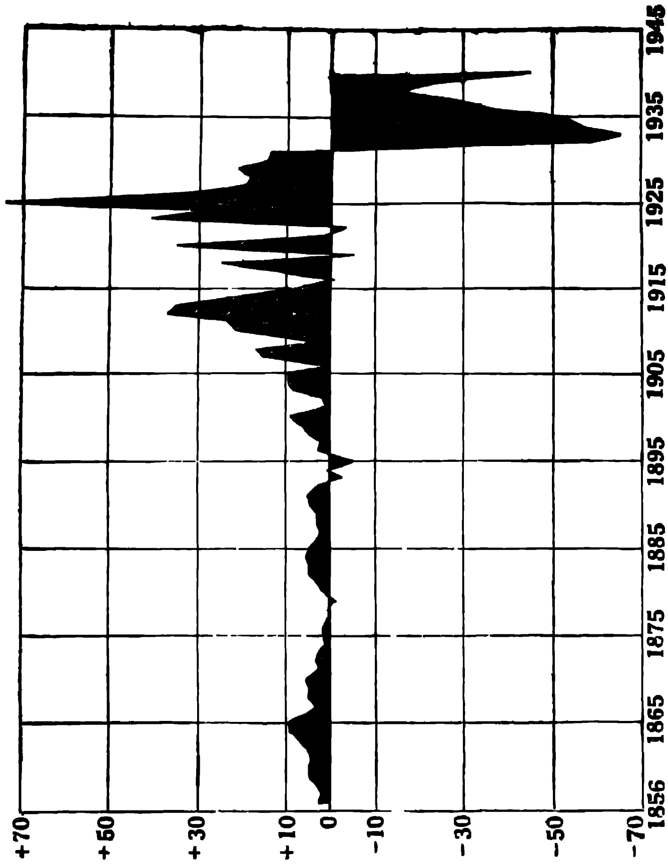


Fig. 25.

Showing net imports (+) or net exports of gold (–) from 1855-56 to 1939-40. The unprecedented character of gold exports which began in 1931-32 is apparent Before 1931-32, net exports of gold from India took place in the following years :

Year ending March	Value of net exports in lakhs of Rs.
1879	– 90
1893	–2,81
1895	–4.97
1916	- 1,11
1919	–5,56
1922	–2,86

There were no net exports of gold in any year between 1835-36 and 1855-56.

We abandoned the gold standard with the United Kingdom, but the rupee remained linked with sterling. The result was the depreciation of the rupee in relation to the dollar, or gold (since the United States were on the gold standard), equal to that of the British paper £.

In 1934 the United States devalued their dollar by 41 per cent and fixed the price of gold at 35 dollars per fine oz. As there has been no devaluation of the British pound, £ gold = 8·24 United States dollars.

The dollar sterling rate that is being maintained at present is very little over 4 dollars. At 35 dollars per fine oz the price of gold in British paper money therefore is $\frac{35}{4{\cdot}03} = £\ 8\text{-}13\text{-}8{\cdot}4$

The rupee = 18*d.*; the $£ = \frac{240}{18} = 13\frac{1}{3}$ Rs.

Per fine oz. the price of gold in India will be :

$$\frac{35}{4{\cdot}03} \times \frac{40}{3} = \text{Rs. } 115{\cdot}8$$

1 tola of fine gold = 180 grains of fine gold
480 grains of fine gold = 1 oz. of fine gold
∴ 1 tola of fine gold = $\frac{180}{480} = \frac{3}{8}$ oz. of fine gold

The price of gold per tola, when the rupee sterling exchange is 18*d.* and the dollar sterling rate 4·03, therefore, is:

$$\text{Rs. } \frac{115{\cdot}8 \times 3}{8} = \text{Rs. } 43\text{-}7 \text{ As. approximately.}$$

We have said above that the Mint price of gold in England per fine oz. was £ 4-4-9¾. The price of fine gold per tola in India before we left the gold standard was Rs. 21-3-10 (ignoring cost of transportation).

Suppose now that the dollar sterling rate is 4·12, or exactly half of the gold parity (8 24), and that the rupee sterling rate is 18*d.* 50% depreciation of the paper £ would double the price of gold in England, and since the depreciation of the rupee in terms of gold would be equal to that of the paper £, the price of gold in India would also rise by 100 per cent, or to Rs. 42-7-4.

The reader is warned that the actual price at which gold is sold in India may differ from the theoretical rate, even when gold is freely exported and imported, on account of local variations in demand and supply. When gold exports and imports are not free, there may be no relation between the local price of gold and the dollar sterling rate. For example, speculative activity raised the price of gold to Rs. 96-4 per tola in Bombay on 26th April 1943, the dollar sterling rate remaining unchanged. The 'token' invasion of India by Japan caused a sudden rise in the price of gold at the end of March, 1944.

11. Advantages claimed for Gold Exports.

The export of gold meant that under the stress of economic necessity, India started consuming her capital (paying for imports by the export of gold). Much of the gold exported was 'distress gold' sold by peasants to meet Government and other dues. The export of gold caused serious anxiety in the country, but the feeling in official circles was one of distinct pleasure. "In fact" said the Viceroy (1932), "it is clear there is not only no cause for anxiety in what is now happening but that it is conferring a great benefit on both public and private interest." In his budget speech (1932-33) the Finance Member, with all the weight of his great authority, advised the people to "part with gold now."

At a time when exports of goods were declining, and exchange tended to fall, gold exports helped to raise exchange and they enabled the Government to pay off some sterling debts. Gold exports thus improved India's credit in the eyes of the world. Gold exports also encouraged 'the flow of international trade.' But for gold imports 'imports of foreign manufactures into India would have shrunk much more than they did owing to the trade depression'. By encouraging 'the flow of international trade' (Sir George Schuster's phrase), our gold exports acquired an international significance.

Gold is not like tea, jute or other commodities. It is the basis of credit and the sinews of war. The individual holder was forced by distress to realize his assets. The Government might have bought the gold and preserved it in the general interests of the country. This suggestion was made to Government. The Government reply was : "We already have our proper proportion of gold in our currency reserves". (Finance Member's budget speech, 1933-34). Gold exports continued even after the establishment of the Reserve Bank of India. The gold holding of the Reserve Bank in February 1944 was precisely the same as in December 1935—44,42 lakhs.

CHAPTER VIII

INDIAN PRICES

The history of Indian prices since 1861 divides itself into five clearly-defined periods:

1861—1905.	Gradual rise of prices.
1905—1914.	Rapid rise of prices.
1914—1920.	Rise of prices due to war.
1920—1929.	Deflationary fall of prices.
1929—1939.	Heavy fall of prices owing to world depression and gradual recovery.
1939— .	Rise of prices due to war.

1. Prices, 1861—1905.

The fluctuations of prices before 1905 show the effect on our agricultural economy of the linking together of distant parts of India by the railway and of Indian with foreign ports.

As early as 1865 passengers and goods could be booked through between Amritsar and Karachi. Through communication between the Punjab and Calcutta and the Punjab and Bombay was established in 1870.

The linking of different parts of the country by means of the railway and the opening of the Suez Canal to traffic exercised an important influence on Indian prices, particularly those of food grains.

There are two chief characteristics of price fluctuations in the pre-railway era, (*a*) fluctuations of prices from year to year were not infrequently great and violent, (*b*) differences in prices in different places were very often considerable.

The influence of the export trade in keeping up prices is referred to in several Punjab Administration Reports of this period. The earliest reference is in the Administration Report for 1865-66, where the "steady increase" in the price of wheat is ascribed to increased demand and "the opening out of new markets."

The Punjab Administration Report for 1871-72 thus comments on the connection between prices in the Punjab and other provinces:

"There can be no doubt that the prosperous grain harvest of 1871-72 in the North-Western Provinces made prices easier in the Punjab; when there is a demand for grain in other provinces, the Punjab prices always rise, even though the supply be abundant" (*p*. 152).

The spring crop of 1873-74 was "a most abundant one," but according to the Punjab Administration Report for 1873-74, "the effect of this on prices was to a considerable extent counter-balanced by the extraordinary export of food-grains to the Bengal famine districts."

The Punjab Administration Report for 1876-77 refers to the "great demand for export to the famine districts of Bombay and to Europe" in the case of wheat in 1876-77. That the price still fell was due to a plentiful supply in the province. "Wheat," the Report adds, "is grown chiefly for sale and export, the agriculturist ordinarily subsisting on the cheaper grains."*

That the European demand exercised a very important influence on the price of wheat in India was admitted by the Indian Price Enquiry Committee of 1910.†

What is true of wheat is also true of all exported articles. The following statement shows the lowest and highest points touched by the average of 28 exported articles in each decade between 1861 and 1920 :—

	Highest		**Lowest**	
1861—70	110	(1866)	88	(1861 and 1862)
1871—80	114	(1878)	90	(1876)
1881—90	104	(1889)	91	(1888)
1891—1900	124	(1897)	103	(1891)
1901—10	124	(1908)	103	(1903)
1911—20	281	(1920)	136	(1911)

It is seen that with one exception, the lowest price-index of each successive decade was higher than that of the preceding decade. In 1901—10 the prices of exported articles were lowest in the year 1903, when, falling from 113 in 1902, they returned to the level of 1891 (103).

While prices showed a tendency towards a slow and gradual rise between 1861 and 1905 (more accurately after 1865) on account of the influence of the export trade, they were still subject to seasonal fluctuations. As before the era of railways, they rose in a year of famine or scarcity, but not so sharply as before, and returned to about (not quite) the old level with the advent of normal seasons. India was visited by famines in 1876-78, 1896-1897 and 1899-1900 ; 1866, 1889 and 1908 were years of scarcity.

---

* P. 82.

† P. 141.

2. Retail Price of Wheat 1861-1940.

The reader's attention is drawn to Fig. 26. The dotted curve *A* shows wheat prices (index numbers, 1873 = 100). The

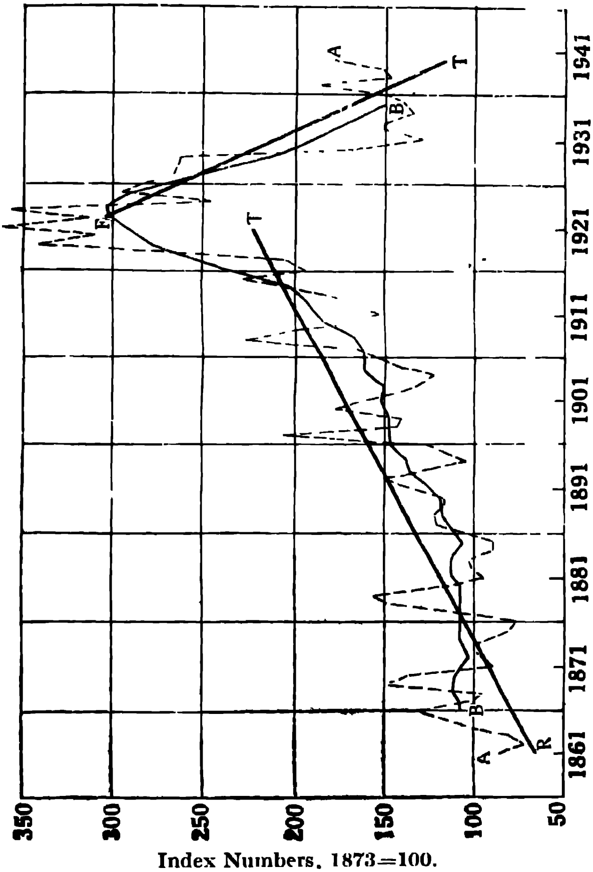


Fig. 26.

Showing the fluctuations in the retail price of wheat in India from 1861 to 1940, and the trend.

Curve *A* (broken line) represents actual data, or the annual rise or fall in price.

Curve *B* (full line) has been obtained by means of 10 year-moving averages (centred).

RT ($y = 145{\cdot}4 + 26x$) shows the rising trend from 1861 to 1921.

FT ($y = 209{\cdot}6 - 10{\cdot}5x$) shows the falling trend from 1922 to 1940. See Table VIII. 1.

curve *B* smooths out the irregularities of curve *A* by means of 10 year-moving averages (centred). The straight line *RT* shows the rising trend of wheat prices during 61 years from 1861 to 1921, and the straight line *FT* brings out the falling trend during 19 years, from 1922 to 1940.

The actual prices show a cyclical movement and a trend. By means of simple statistical devices we can separate the trend from the cycle.

Table VIII. 1.

Retail Price of Wheat in India. Index Nos. 1873=100.

Year	Index No.	10-year moving average	Deviation from moving average	y_t (1)	y_t (2)
1861	86	—		67·4	
1862	73	—		70 0	
1863	80	-		72·6	
1864	102	—		75·2	
1865	115	—		77·8	
1866	129	107	+22	80·4	
1867	101	108	− 7	83·0	
1868	96	111	−15	85·6	
1869	148	111	+37	88·2	
1870	136	109	+27	90 8	
1871	90	105	−15	93·4	
1872	98	102	− 4	96·0	
1873	100	105	− 5	98·6	
1874	94	108	−14	101·2	
1875	81	108	−27	103·8	
1876	78	107	−29	106·4	
1877	102	107	− 5	109·0	
1878	147	108	+39	111·6	
1879	158	108	+50	114·2	
1880	118	108	+10	116·8	
1881	96	110	−14	119·4	
1882	101	112	−11	122·0	
1883	103	112	− 9	124 6	
1884	91	108	−17	127·2	
1885	89	106	−17	129·8	
1886	103	108	− 5	132·4	
1887	121	113	+ 8	135·6	
1888	123	117	+ 6	137 6	
1889	118	118	0	140·2	
1890	117	120	− 3	142·8	
1891	187	124	+13	145·4	
1892	151	131	+20	148·0	
1893	127	136	− 9	150·6	
1894	105	138	−33	153·2	
1895	116	142	−26	155·8	
1896	153	147	+ 6	158·4	

Year	Index No.	10-year moving average	Deviation form moving average	y^c (1)	y_c (2)
1897	206	147	+59	161·0	
1898	148	147	− 4	163·6	
1899	140	148	− 8	166·2	
1900	176	150	+26	168·8	
1901	160	152	+ 8	171·4	
1902	142	150	− 8	174·0	
1903	129	152	−23	176·6	
1904	123	159	−36	179·2	
1905	142	162	−20	181·8	
1906	155	161	− 6	184·4	
1907	168	163	+ 5	187·0	
1908	226	166	+60	189·6	
1909	203	173	+30	192·2	
1910	170	181	−11	194·8	
1911	153	187	−34	197·4	
1912	170	191	−21	200·0	
1913	177	195	−18	202·6	
1914	200	204	− 4	205·2	
1915	227	218	+ 9	207·8	
1916	293	235	−42	210·4	
1917	205	253	−48	213·0	
1918	270	269	+ 1	215·6	
1919	341	280	+61	218·2	
1920	310	286	+24	220·8	
1921	360	293	+67	223·4	
1922	315	301	+15		304·1
1923	356	304	+52		293·6
1924	246	299	−53		283·1
1925	294	289	+ 5		272·6
1926	281	271	+10		262·1
1927	267	251	+16		251·6
1928	264	232	+32		241·1
1929	262	217	+45		230·6
1930	177	203	−26		220·1
1931	126	189	−63		209·6
1932	150	179	−29		199·1
1933	151	169	−18		188·6
1934	135	157	−22		178·1
1935	141	152	−11		167·6
1936	152				157·1
1937	187				146·6
1938	148				136·1
1939	153				125·6
1940	178				151·1

Source : *Index Numbers of Indian Prices* published by the Commercial Intelligence Department and *Stat. Abstract for British India.*

Moving Averages

Periods of higher prices do not occur at regular intervals, but ten-year moving averages give a fairly satisfactory result They are calculated as shown below ·

Year	Index Nos.	Moving Average
1861	86	
1862	73	
1863	80	
1864	102	
1865	115	
1866	129	107
1867	101	108
1868	96	
1869	148	
1870	136	
1871	90	
1872	98	

Sum of index numbers from 1861-1870 = 1066. Av. = 106·6
" " " " " 1862-1871 = 1070 " = 107·0
" " " " " 1863-1872 = 1095 " = 109·5.

These are three ten-year moving averages. Since the number years (ten) is even, the first average can be set down only between the years 1865 and 1866, the second between the years 1866 and 1867, and the third between 1867 and 1868. To avoid placing the average between two years, we centre the ten-year moving averages by means of two-year moving averages.

$$\frac{106\cdot6+107\cdot0}{2}=\frac{213\cdot6}{2}=106\cdot8$$

$$\frac{107\cdot0+109\cdot5}{2}=\frac{216.5}{2}=108\cdot25, \text{ and so on.}$$

The first centred average can now be written against the year 1866, the second against the year 1867 and so on.

The moving averages have eliminated the seasonal fluctuations and revealed the trend.

Removing the trend

The seasonal fluctuations with the trend removed are shown in Fig. 27 (p. 177) The curve has been plotted from deviations, *plus* and *minus*, of the price indices from the moving average.

The straight line rising and falling trends.

The reader already knows the equation of a straight line. The equation to the straight line RF (1861-1921) is

$$y=145\cdot4+2\cdot6\,x\,(x=0 \text{ for } 1891).$$

The equation to the straight line FT (1922-1940) is

$$y=209\cdot6-10\cdot5\,x\,(x=0 \text{ for } 1931).$$

It is clearly seen that prices had a rising trend from 1861 to 1921 and a steeply falling trend from 1922 to 1940. This is true not merely of the price of wheat but of general prices.

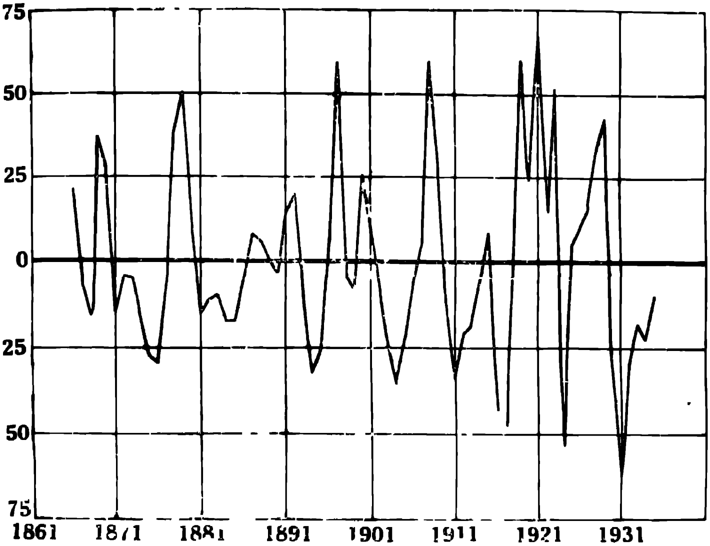


Fig. 27.

Showing the seasonal fluctuations in the retail price of wheat, with the trend removed. The curve shows deviations of price indices, *plus* or *minus*, from the ten-year moving average (centred). See Table VIII. 1.

3. Prices, 1905 – 1914.

After 1905 the prices of food grains and almost all other articles rose almost continuously till 1914.

Attention was called to the rise of prices in India by an anonymous writer in the *Economic Journal* (London) for March, 1907. He attempted to show that the rise of prices was due to the inelasticity of the Indian currency system :

"The conclusion therefore cannot be resisted that the floods of rupees entering the country in the busy season must, finding no employment thereafter, choke the circulation in the dull season and raise prices, whilst each succeeding year the demand grows like a snowball falling down a slope."

In the Budget debate of March, 1908, Mr. Gokhale drew attention to the rise of prices which he attributed to the heavy coinage of rupees by the Government of India, and pressed for the appointment of a committee to consider the whole question of the rise of prices. Writing in the *Journal of the Royal Statistical Society* for September, 1909, Mr. Fred. J. Atkinson, sometime Accountant-General of the United Provinces, reached the same conclusion, that the question of a redundant currency was mixed up with the currency system of India and that the redundancy was due to the fact that the currency was not automatic.

The Government of India appointed a Committtee for the investigation of the problem in 1910. The Committee submitted its report in 1914.

The Committee recognised that "up to 1905 the fluctuations in the prices of food grains and pulses depended largely on the agricultural conditions in India." But a sharp and rapid rise of prices began in 1905 which was not always wholly due to unfavourable agricultural conditions. "Taking India as a whole the agricultural conditions were not seriously adverse either in 1905 or in 1906. Still these years appeared to have ushered in a new period in the history of Indian price levels, the predominant characteristic of which was the existence of famine prices without famine."

The Committee compared the rise of prices in India with that in the leading countries of the world and found that the rise was greatest in India. This is shown by the following statement :—

The Rise in Wholesale Gold Prices in India and Other Countries in the Quinquennium 1907-11.

Country	Compared with 1890—94	Compared with 1894—98
India	40	40
Belgium	25	26
Germany	24	38
United States	20	38
Canada	19	31
Italy	14	24
Australia	13	20
France	12	26
United Kingdom ...	9	21
New Zealand	1	9

In view of the greater rise of prices in India the Committee considered it necessary to examine at length the probable causes of the rise of prices peculiar to India. The general causes of the rise of prices throughout the world were : a shortage in the supply of, or an increase in the demand for staple commodities in the world's markets : the increased gold supply from the world's mines ; the development of credit ; and destructive wars and the growth of armaments.

Mr. K L. Datta (who wrote the Prices Report) regarded comparative shortage of supply as one of the important causes of the rise of prices. The Government of India, however, did not accept this view. They pointed out, in the first place, that the commercial crops occupied a very small proportion of the total area under cultivation, and that in the country as a whole there was no substitution of non food crops for food crops. Secondly, they did not regard Mr. Datta's estimates of out-turn as reliable. The area under cultivation expanded more rapidly than the population, except during the quinquennium 1895-99 to 1899-1900, while between the growth of population and the extension of food cultivation there was "an almost precise parallelism."

4. Credit and Prices.

The Government of India agreed with Mr. Datta that the rise of prices during 1890—1912 was not the effect, but the cause of increase in the circulation of rupees, and that the extended use of credit had "an important effect on prices." They, however, seemed to attach more importance to world factors than to this or any other cause peculiar to India. From 1890 to 1905 "Prices rose or fell in the main in accordance with changes in the agricultural conditions from year to year." The causes of rise of prices since 1905, "must be sought for in a different and independent group of circumstances."

To this view, however, it may be objected that if our price level rose under the influence of the rising price levels of foreign countries, it could not have risen more rapidly than the latter. The rise of prices in Germany and the United States, as Mr. Datta said, could be partly accounted for by their protective tariffs and growth of industrial and commercial combination in these countries. But no such factors were at work in India

As regards the effect of credit upon prices, both Mr. Datta and the Government were mistaken in their view.

Some evidence on the use of cheques in India was taken by the Chamberlain Commission. Mr. Henry Marshall Ross, a witness, was of opinion that the use of cheques could be advantageously extended even in the Presidency towns. "It is very poor at present," he said. He was asked whether the use of cheques was likely to curtail the circulation of currency notes and whether it was probable that cheques would be used at all throughout the country beyond the Presidency towns. His reply was "not within any period I can look forward to myself. They will be confined to the Presidency towns' business."

Important evidence in this connection was given by another European witness :

Q. 4106. (Mr Keynes). Can you tell us in what class of transactions you find it possible in your business to use cheques ?—Speaking of my own business I use cheques practically in every case, no matter what the kind of payment, except for wages and salaries which I always pay in cash.

4108 -If you are buying produce of an Indian trader, would you pay him by cheque ?—Very rarely. He probably wants either currency notes or actual cash.

4109—Then these cheques which you mention are paid to English merchants ?—That is so largely.

4110—And except when you are making payments to other English merchants you would not use cheques much ? —No, broadly speaking, I should not.

In a memorandum submitted by the same witness to the Commission, he had referred to the possibility of the use of cheques being gradually increased throughout the country. The Commission asked him whether he thought that would be a speedy process. The witness said "No " What he had in his mind more particularly was the European community using cheques more —" .. the native does not to any great extent use cheques for large amounts," he added.

Q. 4072. And it is not likely that he will ? "I do not think so for long time to come."

The Prices Committee did not seriously examine the charge of inelasticity brought against the gold exchange system.

So far as the addition of rupees to the circulation is concerned, the only difference between the gold exchange system and the system which existed before 1893 according to Mr. Datta was that while in the one case rupees were issued in exchange for the imported gold and Council bills, in the other case they could be obtained directly by the minting of bullion at the option of its owner.

In a monetary system with an open mint the currency decreases automatically when the rise of prices causes imports to increase and renders the export of gold or silver necessary. The circulation is thus reduced and prices fall. Under a gold exchange system an adverse balance of trade cannot be adjusted by the exportation of the token coins. The tokens must be converted into gold (or bills payable in gold) for that purpose. The Government of India did so when it became necessary. This was the outlet provided for the excess currency.

What the Prices Committee forgot was that before the rupee became a token coin (that is, before 1893) hoarding and melting, apart from export, accounted for about 45 to 50 per cent of the coinage.

When the rupee became a token coin, the melting of rupees ceased altogether, while for purposes of hoarding gold was preferred. It cannot be doubted that the hoarding and melting of rupees before 1893 prevented prices from rising too rapidly by reducing the volume of the currency, and that the change in the character of the rupee, from a full value coin to a token coin, by discouraging hoarding and making it unprofitable to melt rupees, contributed in some measure to the inflation of the rupee currency. It really proves nothing to say, as Mr Datta does, that the average annual coinage during the eighteen years that have elapsed since the closing of the mints has been much less than in the corresponding period preceding that date.' The averages are 751 lakhs for the period 1874-75 to 1893-94, and 566 lakhs for the period 1893-94 to 1911-12. In the decade following the closing of the mints the average net coinage was small, due to a deliberate restriction of the coinage to force up exchange. The net coinage of silver was very heavy in the period 1899-00 to 1907-08, amounting to a total of 100·24 crores for 9 years, or over 11 crores annually on an average. During 19 years, from 1874-75 to 1892-93, the total net coinage of silver amounted to 137·88 crores, which gives an annual average of 7¼ crores. The rise of prices became very marked, as we have seen, after 1905. Now in the triennium 1905-06 to 1907-08, the total net coinage of silver amounted to 55·96 crores, a figure which has not been exceeded by the total net coinage in any period of *five* years before the closing of the mints.

The Prices Committee's index numbers showed that between 1890 and 1910 the demand for currency increased much more rapidly than the supply of currency (rupees and notes). The Committee under-estimated the monetary circulation and over-estimated the growth of business. The defence of the gold exchange system by the Prices Committee is of little interest now, after the condemnation of that system by the Hilton Young Commission of 1925.

5. Rise of Prices, 1914—1920.

The rise of prices before the war had one satisfactory feature —the prices of exported articles rose more rapidly than those of imported articles. The outbreak of war made no change in this respect, but as the war proceeded, the shortage of imports, due to the preoccupation of Western countries with the war and the scarcity of shipping, began to make its influence felt. For the first time after 39 years the index number of imported articles rose above that of exported articles in 1916 (236 and 163 respectively).

The addition to the monetary circulation in five years from 1914-15 to 1918-19 was about 39 crores annually (rupees 22 crores and notes about 17 crores). The addition to the circulation in 1919-20 was more than 40 crores. The budget deficit in 1919-20 exceeded 23 crores; practically the whole of the deficit was due to the Afghan War. The deficit was met by the issue of fiduciary currency against the Government's own securities.

In India, as in European countries, prices were highest in 1920, but Indian prices rose to a smaller extent than European prices. The causes which raised prices in Europe were also working in India but in a much attenuated form.

6. Fall of Prices, 1920—29.

The Calcutta series of index numbers (July 1914=100) shows a rise of general prices to 202 in 1920 and a steady fall thereafter to 141 in 1929. The fall was due to a deliberate policy of deflation, or currency contraction. Prices of war years were inflated prices.

As regards the effects of the rise of prices, the Government of India in a Memorandum submitted to the Babington Smith Currency Committee (1919) said : "There is no longer any room for doubt that the resultant increase in the expense of living due to the high prices of foodgrains, also of other accessories such as cloth and kerosene oil, and the hardship which the increase has entailed on the poorer classes and those with fixed incomes, has been a very important factor in promoting unrest and discontent."

7. The Great Depression.

The following statement shows the movement of wholesale prices from 1940 in India and three other countries

Table VIII. 2

	Calcutta 1914=100	United Kingdom 1930=100	U.S.A. 1926=100	Japan 1900=100
1929	141	—	95	220
1930	116	100	86	181
1931	96	88	73	153
1932	91	86	65	161
1933	87	86	66	180
1934	89	88	75	178
1935	91	89	80	186
1936	91	94	81	198
1937	102	109	86	238
1938	95	101	79	251
1939	108	103	77	278
1940	120	137	79	311

The fall of prices was universal. General prices in India fell to 87 in 1933, and though there was a marked recovery in 1937.

The 'Great Depression', rightly so-called, was of great intensity and of extraordinary persistence. It caused a heavy contraction of world trade. It was ruinous for agricultural countries particularly, as the fall of prices was heavier in the case of primary products than manufactured goods. The terms of trade moved against India.

8. Effect on India's Balance of Trade.

In the year 1928-29 exports of Indian merchandise were valued at Rs. 330 crores, re exports of foreign merchandise at about 8 crores, and imports of foreign merchandise at 251 crores. The balance of trade was in our favour to the extent of over 86 crores.

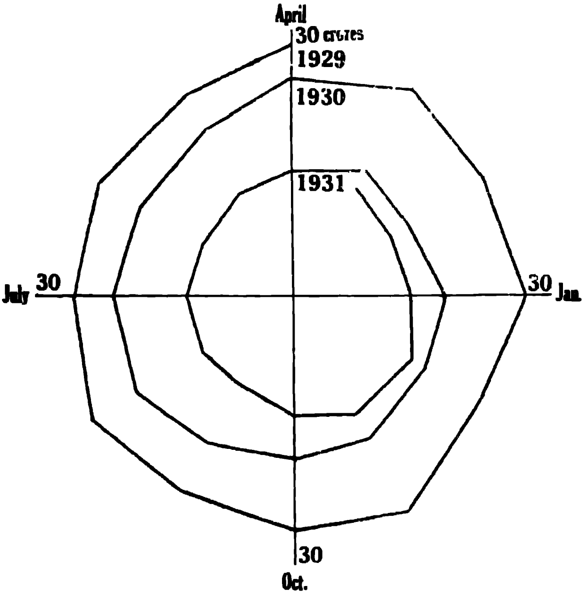


Fig 28 (*a*)

Showing the contracting spiral of India's *Exports*, from April 1929 to the end of March 1931. The value of exports of Indian merchandise fell from 27¼ crores in April 1929 to 15⅓ crores in March 1931.

In the year 1932-33 the value of exports of Indian merchandise was equal to that of imports of foreign merchandise (132 crores). The amount of our favourable balance in that year (Rs. 3 crores) was due to re-exports of foreign merchandise.

These figures mean that the balance of payments turned against India. But for gold exports, as we have seen, the 18*d.* rate could not have been maintained.

There was recovery, not unmarked by setbacks, in the following years. Excluding Burma, the excess of exports over imports amounted to about 14½ crores in 1938-39. (See Fig. 29, page 185.)

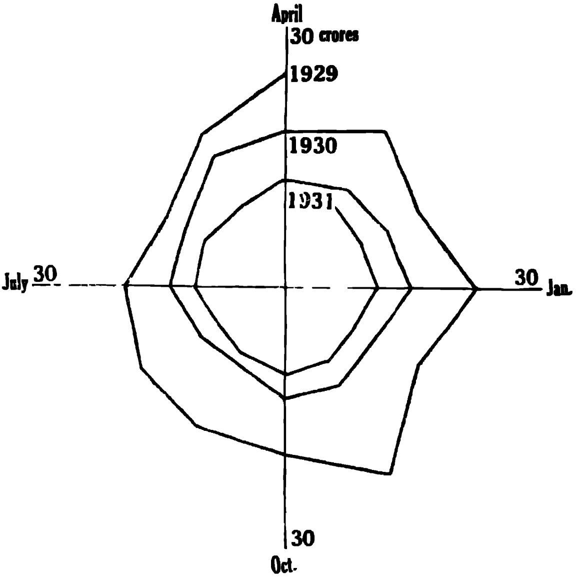


Fig 28 (*b*)

Showing the contracting spiral of India's *Imports* from April 1929 to the end of March, 1931. The value of imports fell from about 24½ crores in April 1929 to 13 crores in March, 1931.

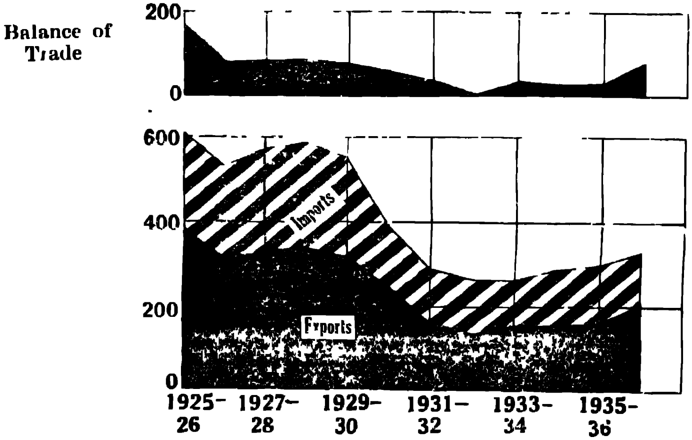


Fig. 29.

Showing exports, imports and balance of trade in merchandise from 1925-26 to 1936-37. Net exports of merchandise are shown below :

Year	Crores Rs.	Year	Crores Rs.
1925-26	1,51	1931-32	81
1926-27	70	1932-33	1
1927-28	69	1933-34	34
1928-29	76	1934-35	21
1929-30	69	1935-36	28
1930-31	53	1936-37	75

9. Causes of the Great Depression.

The crises was due to the action of both monetary and non-monetary causes. Of these perhaps the latter deserve more emphasis.

There is a good deal of evidence to show that world production of important crops such as wheat, cotton and sugarcane was expanding more rapidly than the world demand. Over-production, both in the case of primary products as well as manufactured goods was due to scientific progress. The Great War gave a great stimulus to the industrial development of less advanced countries, which restricted the markets for products of the leading industrial countries. In countries of Central Europe, as also in France and Italy, heavy agricultural protection, which was adopted partly for reasons of economic self-sufficiency and partly to protect the currency and the foreign exchanges, reduced imports from agricultural countries.

Among monetary causes attention may be drawn to the stabilisation of currencies in post-war years at a level (as in the case of the United Kingdom) higher than the internal purchasing power of money ; gold hoarding by France and the United States ; and irregular lending by the United Kingdom and the United States, the two chief creditor countries. When agricultural prices fall, making it difficult for agricultural countries to pay interest and repay loans, the foreign investors become unwilling to lend further. Under such conditions foreign capital invested in a country becomes 'home-sick' (*Heimweh des Kapitals*).

Even before the abandonment of the gold standard by the United Kingdom several countries (including Australia) had already suspended the gold standard officially, and several others (including New Zealand) had allowed their currencies to depreciate in relation to gold. More than half the world left the gold standard with England. Devaluation in the United States came early in 1934, and later in the countries of the 'Gold Block.'

10 Causes of Recovery.

The year 1937 definitely showed signs of improvement in world trade and production. Recovery from the crisis was due to the combined action of a number of factors.

'The most immediate practical by-product' of the world Economic Conference of 1935 was the determination to restrict the supply of primary products. Special attention was given to rubber, wheat and tin, but other products were not ignored. "By 1935 international restrictive schemes were actually or nominally in force for wheat, nitrates, rubber, sugar, tea, tin, copper, diamonds, potash ; and there were national restrictive schemes for a number of other products including oils, cotton and cereal grains in the United States, coffee in Brazil and jute in British India."* In addition national schemes were evolved for the combined regulation of imports and internal production in many countries ; there also arose national and international cartels for regulating the output, sales and prices of manufactured commodities, *e.g.*, the European Steel Cartel. Only a very few primary commodities escaped regulation, the chief exceptions being wool, timber and lead.

A second factor in recovery was currency depreciation. "The fall of their currencies against gold, and in some cases against sterling, helped the Dominions in several direct and indirect ways."† Devaluation in France, Belgium, Holland, Switzerland and Italy materially assisted recovery in these countries.

Thirdly, re-armament, or preparation for war, created a vast demand for basic materials and finished products of many kinds. It has been estimated that 60 per cent of industry is affected by armament expenditures.

Rearmament reduced unemployment, and increased the purchasing power of the working classes in Western countries.

Lastly national recovery in particular cases was helped by the new methods of international trading, that is, trade agreements, monetary and quantitative restrictions applied to international buying and selling, bilateral trade and clearing systems.

---

* ***Slump and Recovery,*** **by Hudson (Oxford University Press) p. 230.**

† *Hudson, loc-cit,* p. 175.

The evidence of industrial recovery in India is furnished by the chain-index of profits of all industries. The worst year was 1932 (chain index 27·8, base 1928=100). In 1936 the index figure had risen to 69·2. The years 1930-1939 saw an appreciable expansion of India's industrial output under the stimulus of protection.

Agricultural recovery was less marked. In an agricultural country the growth of industries may be assisted by the tariff, but no means exist of compelling foreign purchasers of primary products to purchase more and at higher prices. Agricultural prices, before the outbreak of the war, were unremunerative in the case of important crops like wheat, cotton and jute.

The heavy fall of agricultural prices during the Great Depression not only made cultivation over large parts of the country unremunerative, but about doubled the burden of rural debts, and of Government dues. It is literally true that in the Punjab and also in other provinces, the smaller land holders paid Government dues (land revenue and water-rates) by selling the ornaments of their wives and children.

How was agricultural distress relieved?

Generally speaking land revenue remissions were inadequate. As a matter of principle the water-rates are not varied according to changes in prices. These are the two main sources of provincial income, and a heavy fall under these heads would make it impossible for provincial administration to be carried on.

Provincial governments had little money to spend on farm relief. The chief target of attack was the money-lender.

11. Farm Relief in Other Countries.

Agricultural distress during the Great Depression was universal. Everywhere agricultural operations are carried on with borrowed money; in India the cultivator for the most part, is financed by the private money-lender, and in Western countries by banks or other institutions.

A study of farm relief in different countries was made by Sig. G. Costanzo in the pages of the *International Review of Agriculture*, Rome (issues for January, February, March and April, 1937).

He divides the States into 3 Groups : (1) States that took radical measures aiming directly at relieving the farmers from the burden of their debts. (2) States that directly intervened in the matter, but endeavoured to assist debtors without affecting the interests of creditors, and (3) States that helped the debtors mainly by indirect means, 'or by a general policy of strengthening and protecting agricultural economy, but without violating the principle of respect for obligations incurred.'

'It is needless to say,' says Sig. Costanzo, 'that the plans for the adjustment of debts have involved the Governments in financial operations often on a large scale' (p 12E).

This is in marked contrast to our own policy.

Sig. Costanzo did not fail to note that the radical measures, adopted in certain countries (compulsory reduction of the rate of interest and of the capital sums due and application of a moratorium) 'usually had results contrary to what was hoped from them, that is, contraction of credit. Violent disputes also broke out between debtors and creditors which made it necessary for public authorities to adopt 'new measures in order to calm the people' (*p*. 12E).

His study led him to the conclusion that the results of drastic public interference in debtor and creditor relations were 'regrettable', and that a wiser course is to adopt measures 'that respect contractual obligations and protect the distressed debtors without too greatly sacrificing the creditors, such as the repayment of the debt by instalments over a series of years, contribution by the State towards the payment of interest etc.' (*p*. 12-3 E). He also considered it essential 'to go to the root of the evil,' that is to raise agricultural prices to a remunerative level.

The following is a summary of measures of farm relief in different countries :

1. Reduction in capital debts (Bulgaria, Rumania, Yugoslavia, Brazil).
2. Reduction in interest (Germany, Italy, Switzerland and other countries).
3. Postponement of debts (Poland and many countries).
4. Conversion of short term into long term debts (Italy, Estonia and other countries).
5. Payment by instalments spread over a long term of years (many countries).
6. Protection against distraint (Germany and other countries).
7. State assistance in the from of loans (Italy, Denmark, Sweden, Latvia, South Africa, Australia, United states).

The Union of South Africa spent £33,000,000, on farm relief, which included the writing off loans due by farmers to Co-operative Credit societies. The Government of the United States spent much more. The Federal Land Bank in the United States issued farm loan bonds for the purpose of making new loans, for purchasing mortgages, or for exchanging bonds for mortgages. Considerable sums of money were further provided by the State for re-financing any indebtedness of the farmer, for enabling him to redeem farm property, and other purposes.

In India the Bhavnagar State set an example which British India might have followed. The State lent money at 4% to the cultivators to enable them to pay off the debts settled by Conciliation Boards.

The Central Banking Enquiry Committee had suggested the following scheme for dealing with indebtedness :

1. Debt reduction on a voluntary basis, the reduced amount to be paid in cash in a lump sum or by equated payments spread over a number of years.
2. Co-operative credit societies to be utilized as the agency for the payment to the lender of the settled debt.
3. The outstanding part of the settled debt to be treated as a deposit by the lender with the co-operative society, which will be paid to him in settled annual instalments.
4. Government to assist Co-operative Societies with necessary funds for payment of the settled amount in cash.
5. In cases where a society is subjected to loss on account of the failure of the borrower to pay his instalments, the Government should come to the assistance of the society.

The scheme threw a measure of burden of farm relief on the co operative movement and the Government. It was ignored.

12. Agrarian Legislation, Punjab.

The Agrarian legislation of the Punjab Government comprised the following measures :

(1) *Regulation of Accounts Act, 1930.* Under this Act it is the duty of the creditor to record and maintain regularly in the manner prescribed by Government a separate account for each and every debtor and to furnish a legible statement of accounts at the end of every six months to each and every debtor. If he fails to do so in regard to a loan, even if his claim is established in whole or in part, the court shall disallow the whole or portion of the interest found due, as might seem reasonable, and further disallow costs.

(2) *The Relief of Indebtedness Act, 1934.* It consists of 6 parts :

Part I defines a loan. A loan may be in money or in kind.

Part II simplifies insolvency procedure. A person who only owes Rs. 250 can apply to be adjudicated insolvent. The limit for Summary Administration of the estates of insolvents has been raised from Rs. 500 to Rs. 2,000, that is, estates of the value of Rs. 2,000 can be summarily administered. In summary administration it is not necessary to appoint a receiver or to publish certain notices.

Part III is concerned with usurious loans. The court shall deem interest to be excessive if, on secured loans, it exceeds 12 per cent per annum simple interest, or 9 per cent compound interest, and if, on unsecured loans, it exceeds 18¾ per cent simple interest or 14 per cent compound interest.

Part IV makes provision for the setting up of Debt Conciliation Boards.

A Debt Conciliation Board consists of a chairman and two or more members to be appointed by the local Government, for a term not exceeding 3 years.

An application for debt settlement may be made to such Board by a debtor or any of his creditors. When a debtor has applied for settlement, the Board calls upon every creditor of the debtor to submit a statement of debts owed by the debtor. Every debt of which a statement is not submitted to the Board *is deemed for all purposes and all occasions to have been duly discharged*.

The creditor is bound to furnish all necessary information to the Board supported by documents, regarding his claim. The debtor is called upon to explain his case, and finally the Board uses " its best endeavours to induce them to arrive at an amicable settlement."

If the debtor and all or any of the creditors come to an amicable settlement, the Board reduces the settlement to writing. The agreement is then registered and takes effect as if it were a decree of a civil court.

If no amicable settlement is arrived at, the Board dismisses the application.

If a creditor refuses to accept what the Board consider a fair offer on the part of the debtor, the Board may grant the debtor a certificate in respect of the debts owed by him to such creditor. The advantage of this certificate to the debtor is that if the creditor sued him for the recovery of the debt, the court shall not allow the plaintiff (creditor) any costs in such suit, nor interest on the debt after the date of registration at more than 6 per cent per annum simple interest.

The ancient principle of *Damdupat* has been applied in Part V to agricultural debts. In any suit brought against an agriculturist for the recovery of a loan taken after the commencement of the Indebtedness Act, no court shall pass a decree for a larger sum than twice the amount of the sum taken as principal. Loans made by a bank to an agriculturist are not subject to this provision.

Finally in Part VI it has been provided that an agriculturist debtor may, at any time, deposit in court a sum of money in full or part payment of his debt for payment to his creditor. From the date of deposit interest shall cease to run on the sum so deposited.

(3) *Debtors' Protection Act, 1936.* Under this Act civil courts can order that the land of a judgment debtor be attached and temporarily alienated and then transfer the execution proceedings to the Collector of the district. The Collector (Deputy Commissioner) is to determine how much of the land of the judgment debtor is to be attached and alienated and for what period, not exceeding 20 years.

(4) *Amendment II to the Alienation of Land Act, 1900* declares *benami* transactions invalid. When a sale, mortgage or lease purports to be made by a member of an agricultural tribe, or of a tribe in the same group, but the effect of the transaction is to pass the beneficial intersect to a person who is not a member of the same tribe or of a tribe in the same group, the transfer shall be void for all purposes, and the alienor shall be entitled to possession of the land so alienated notwithstanding the fact that he may have himself intended to evade the provisions of the Act.

The statement of objects and reasons explains that the object of the amendment is to prevent fraudulent transactions and to secure that *benami* transfers intended to evade the provisions of the Act of 1900 can be reversed in all cases. The person dispossessed can claim compensation for improvements, but not exceeding the value of the original transaction.

(5) *Amendment III to the Alienation of Land Act* is concerned with zamindar money-lenders. Its object is to prevent the acquisition of the land of the debtor by the zamindar creditor in satisfaction of his claim. The restrictions imposed

on the agriculturist creditor have also been imposed on all males who can trace their descent from the creditor's grand-father and their wives; similarly, the restrictions imposed on the debtor have also been imposed on all males who can trace their descent from the debtor's grand-father, and their wives. The creditor cannot buy the land of the debtor until three years after the payment of the debt in full.

Under the Registration of Money-Lenders' Act all money-lenders will have to get themselves registered and to hold a licence on the payment of the fees that may be fixed. Failing to do so no court shall entertain any suit by a money-lender for the recovery of a loan or application for the execution of any decree relating to a loan.

A licence may be cancelled by a Collector for a specified period for mal-practices.

Except when specially permitted to do so by the Collector, no Court can entertain a suit for the recovery of a loan, or an application for the execution of a decree by a money-lender during the period for which his licence has been cancelled.

Another measure extinguished mortgages effected before the commencement of the Punjab Alienation of Land Act, 1900. Compensation may be paid under certain conditions, but not as a rule.

In the Punjab Agrarian legislation had an undeniable communal bias. The working peasant needed protection not only against the rapacious money-lender but also against the not less rapacious non working landlord. No action was taken in the Punjab to regulate cash or *batai* rents. Not only that. When it was pointed out that the restriction of credit, resulting from the Agrarian Acts would tend to hasten the process of swallowing up of the smaller by the bigger (non-working) agriculturists, the then Premier made the following astounding statement in the Punjab Assembly :

"Some members were labouring under the misapprehension that big zamindars were eating up small zamindars in the Punjab. This was far from correct. The Government had collected statistics from Jhang, Shahpur and Multan, three districts where there were the biggest zamindars. It had been found that owing to their extravagant or western style of life big zamindars were gradully selling their lands to small zamindars. Thus in this instance at least the old saying that big fish eat small fish had been reversed (laughter and applause)."

The Punjab Government have so far failed to publish any statistics showing that in the three districts mentioned, or in the Punjab as a whole, small fish are eating up big fish. These statistics simply do not exist.

13. Other Provinces.

As in the Punjab, measures were enacted in the other provinces to protect the agriculturist against the money-lender, Madras legislation being particularly drastic. But the non-working landlord was not forgotten. The most important measures in Bihar are those relating to the reform of tenancy. There were five such measures reducing rents, facilitating transfers of lands, suppressing illegal exactions by landlords, and restoring land sold for arrears of rent. In the United Provinces tenancy legislation contained provisions regarding *Sir* (home farm) ; devaluation, transfer, extinction, merger and exchange of tenancies ; determination and modification of rents ; payments and recovery of rent ; distraint ; ejectment ; arrears of revenue and numerous other matters. The proposal to reduce the home-farm of bigger landlords, in which tenants cannot acquire hereditary rights, aroused the bitterest opposition on the part of landlords.

Bombay enacted a Small-Holders' Relief Act (1938) ; and it was also proposed to create a class of protected tenants with controlled rents.

Tenancy legislation is long over-due in the Punjab. Most tenants in the Punjab are tenants-at-will, and the tenant class is growing. At present about half of the total cultivated area of the Punjab is cultivated by tenants-at-will. This percentage was 40 in 1892-93. And as an exploiter, pure and simple, the Punjab landlord is probably without an equal. Mr. Calvert contrasts British and Punjabee landlords, to the disadvantage of the latter. But non-working landlords at present govern the Punjab, and they cannot reasonably be expected to cut their own throats.

CHAPTER IX

CURRENCY AND EXCHANGE

1. The Act of 1835.

The rupee was established as a standard coin throughout the territories belonging to the East India Company in 1835 Before that date a great variety of gold and silver coins circulated in different parts of the country, silver rupees being used chiefly as standard money, while the value of gold coins depended upon the market price of gold. The circulation of several denominations of coins in the country caused great inconvenience to the trading community and to the Government, and we find the Court of Directors, in their Despatch dated 25th April, 1806, approving the recommendations of their officers in India "for the adoption of one general system for the formation of the coins for the currency of the whole of our possessions on the continent of Asia,' for they were "fully satisfied the evils complained of can only be removed by the introduction of a gold and silver coinage of one weight and fineness, such coin to become the universal measure of value for British India."[1]

No less than 27 varieties of rupees were current in Bengal, and in the Punjab. Before the time of Ranjit Singh, currency conditions were not less chaotic. Ranjit Singh closed all the mints except those at Lahore and Amritsar, where the Nanakshahi rupee was first coined. The Nanakshahis were 'the national currency" of the Punjab. They were divided into three series called the *porane*, coined from 1796 to 1811 ; the *chulme*, coined from 1814 to 1824 ; and the *chilte* coined, after 1824. The *porane* circulated at a discount with the *chulme* and the *chulme* at a discount with the *chilte*. All three were at a discount with the Company's rupee, in spite of their greater intrinsic value. The artificial value given to the Company's rupee over the *porane* and the *chulme* was due to the fact that neither of those coins was received at the British treasuries.[2]

About the same time 15 coins, in addition to the Company's rupee, were current in Rajputana, and they were "as much a marketable article as opium, cotton, or any other staple of commerce."

[1] ***East Indian Currency*, No. 127, para. 4.**

[2] ***Papers Relating to (East India) Coinage*, 1860 (No. 264), p. 24.**

[3] ***Ibid.*, p. 29.**

The Act No. XVII of 1835 made the silver rupee of 180 troy grains, eleven-twelfths fine, the standard throughout British India. The weight and the fineness of the rupee have remained unaltered since 1835.

2. The Position of Gold in the Currency.

By section 9 of the Act of 1835 it was enacted that "no gold coin shall henceforward be a legal tender for payment in any of the territories of the East India Company." The Court of Directors, however, in the Despatch of 1806 had stated that "it is not by any means our wish to introduce a silver currency to the exclusion of the gold, where the latter is the general measure of value, any more than to force a gold coin where silver is the general measure of value."*

In para. 16 of the Despatch they clearly defined their attitude towards the use of gold as currency :—

> "Although we are fully satisfied of the propriety of the silver rupee being the principal measure of value and the money of account, yet we are by no means desirous of checking the circulation of gold but of establishing a gold coin on a principle fitted for general use. This coin, in our opinion, should be called a gold rupee and be made of the same standard as the silver rupee, *viz.*, 180 troy grains, gross weight, and 165 troy grains, fine gold, also divided into halves and quarters, so that the coins of both gold and silver should be of the same denomination, weight and fineness."

In view of this pronouncement it is difficult to understand why the gold pieces coined under the Act of 1835 were deprived of the legal tender quality. By a proclamation issued in 1841 officers in charge of public treasuries were authorised to receive the gold coins struck under the provisions of the Act of 1835 at their denominated value, until they should have passed a certain limit of lightness, when they were to be taken as bullion only, by weight. It is also not clear what was the precise object in requiring public treasuries to receive gold coins which were no longer legal tender. It was certain that so long as the market price of gold exceeded the denominated price of the coin in silver, no gold would be brought to the Government, but if the market price of gold fell below the silver denomination of the coin, gold would accumulate in Government treasuries, and this gold could not be used by Government in making payments to the public as it was not legal tender. Such was actually the result of the proclamation of 1841. In a letter to the Court of Directors, dated 2nd July,

---

******Para*. 22.**

1852, the Government of India pointed out that there was 30 lakhs of rupees worth of gold in Government treasuries which was of no use to them

The Government of India proposed that the proclamation of 1841 should be withdrawn, The Court of Directors agreed with the Government that it was important at once to check the receipt of gold into the Indian treasuries, but they pointed out that the proclamation of 1841 was not intended to bear the interpretation which the Government had given to it. By a notification issued in December, 1852, it was declared that beginning with January, 1853, "no gold coin will be received on account of payments due, or in any way to be made, to the Government in any public treasury within the territories of the East India Company." Gold, however, continued to be received into the mint for coinage under the Act of 1835.

While the action taken by the Government tended to discourage the use of gold as currency, the fall in its price, consequent upon the discoveries of gold in Australia and California, considerably increased the demand for gold. Memorials were submitted to Government by various Chambers of Commerce praying for the introduction of a gold currency. The more important proposals made with a view to encourage the use of gold as currency were : (1) the introduction of the sovereign or some other gold coin which should circulate at its marked price from day to day measured in silver ; (2) the introduction of the English sovereign as legal tender for ten rupees, but limited in amount to 20 rupees ; (3) the change of the monetary standard from silver to gold, silver tokens to be used as subordinate coins. These proposals were examined by Mr. James Wilson (Finance Member) in a minute entitled "Proposals to introduce a Gold Currency in India," dated 25th December, 1859. He thought, and rightly, that a gold coin, whose value as measured in silver was fluctuating from day to day, could not be used as currency. To the proposal to permit the circulation of the sovereign as legal tender to a limited extent of 20 rupees his objection was that the sovereign would not circulate so long as its value was above the ratio at which it was made legal tender, and that every effort would be made to force it into circulation if its value fell below that ratio. The result would be that those who received the sovereigns in payment of small sums (railway companies and small dealers, for example). would not be able to use them in making large payments without risk of loss. This objection did not apply to a change in the standard from silver to gold, and Mr. Wilson admitted that if Government "had to begin *de novo*, convenience would point to a gold standard with silver tokens as the best." But he thought that in a country where all obligations had been contracted to be paid in silver, to change the standard from silver to gold, because gold had depreciated, would be to defraud the creditor for the advantage of the debtor and to break public faith. His view was that a well-regulated paper currency was more desirable than gold in circulation, and he submitted his proposals for a Government paper currency in a separate minute.

To James Wilson's plan for a paper currency it was objected that the people of India would be slow to appreciate the advantages of paper money as from time immemorial they were accustomed to the use of money of intrinsic value.

The case for the introduction of gold into circulation in India was ably argued by Sir Trevelyan in a minute dated 20th June, 1864. Information collected by Sir Charles Trevelyan from all parts of India showed that there was a general desire for the introduction of gold coins in India ; that the people of India were well-acquainted with the sovereign ; and that there was every reason to think that the introduction of the sovereign would be well received and that it would circulate freely at 10 rupees. The Secretary of State, however, did not think it advisable to make the sovereign legal tender, but as an experimental measure he suggested that the sovereign and the half-sovereign should be received into and paid out of public treasuries in India for ten and five rupees respectively, and effect was given to this proposal by a Government notification in November, 1864. But the rate of ten rupees to the sovereign was below the market value of the sovereign, and therefore it failed to attract sovereigns to Government treasuries The rate was raised to Rs. 10/4/- for the sovereign and Rs. 5/2/- for the half-sovereign in October, 1868. Shortly afterwards the gold price of silver began to fall, which entirely changed the Indian currency situation, and the Government of India adopted the following Resolution on the subject of a gold currency on 7th May, 1874 :—

"The expediency of introducing a gold currency having been considered, the Governor-General in Council is not at present prepared to take any step for the recognition of gold as a legal standard of value in India."

3. The Fall in the Gold Value of Silver.

The fall in the gold value of silver commenced in 1873, and by 1893 it amounted to 40 per cent.

Expert opinion was divided as to the causes of the fall. On the one hand it could not be denied that while the production of silver had increased, the demand for silver had, at the same time, decreased owing to (*a*) the cessation of free coinage of silver in Germany, the Latin Union and Holland, and (*b*) diminution in the Indian demand for silver caused chiefly by increase in the sale of Council bills. It would, therefore, appear that the change in the relative values of the precious metals was due to causes affecting silver. On the other hand, there is a good deal of evidence to show that during the whole period, 1873—1893, gold was appreciating owing to causes affecting gold itself—decreased production and increased demand for industrial and monetary purposes. If the purchasing power of gold and silver in terms of commodities is considered, it is found that the fall in the gold value of silver far exceeded the fall in the value of silver as measured by purchasing power over commodities either in China or in India, while the purchasing power of gold over commodities in England increased very considerably. The movements of gold and silver prices unmistakably show that the change in the relative value of the precious metals was primarily due to the appreciation of gold, not depreciation of silver.

Whatever be the causes of the fall in the gold value of silver, its effect on Indian finance was most serious. The Home Charges amounted then to about £15,000,000 annually. The Home Charges represent a sterling obligation of the Government of India, while the revenues of the Government are collected in silver. Every fall in the gold value of the rupee thus meant a real addition to the burden of the Home Charges.

In a note dated 13th July, 1876, R. B. Chapman, Secretary, Financial Department of the Government of India, pointed out that from 15½ times gold had risen to be worth about 20 times its weight in silver, and that the fall in exchange to 1*s*. 7*d*. had made it necessary for the Government to find crores of rupees annually in excess of what they had at their disposal. "The task", he wrote, "is formidable enough to cause dismay. It will be requisite to give up all administrative luxuries and even some necessaries......Resort must, moreover, be had even to new taxation. But a loyal and combined effort must be made. I see no way of escape from the painful exigency."

Any considerable increase in taxation, however, was not practicable for political reasons and the situation was one of great difficulty.

Apart from increasing the burden of the Home Charges, the fall in exchange tended to check the investment of foreign capital in India and lowered the gold value of the salaries, paid in rupees, of the European employees of the Government. It also made foreign trade a gamble in exchange.

In view of the ultimate establishment in India of the gold exchange system it is interesting to learn that as early as 1876 it was proposed to secure stability of exchange by closing the mints to the coinage of silver and giving the rupee an artificial gold value. The main features of this plan were described in a letter by Major-General Richard Strachey to the Editor of the *Pall Mall Budget*, dated 10th August, 1876. It was suggested that the mints should be closed to the free coinage of silver and the rupee coinage placed entirely under the control of the Government; that, as a temporary arrangement, the mint should be opened for gold; and that the gold value of the rupee should be fixed at about 1s. 11*d.* and notes issued against gold at fixed rates.

The authorities in India did not appreciate the novel idea of establishing a gold standard with a currency mainly composed of token silver rupees issued by the Government. Major-General Strachey's letter called forth a spirited reply* from R. B. Chapman,

---

*"I am astounded that you should propose such a tremendous heresy as a *permanent* divorce between the standard and the currency. Surely this is nothing in the world but an inconvertible currency, limited, it is true (though I observe that you would not even *limit* it absolutely), but still *inconvertible*. If we are to go in for an inconvertible currency, why should we go to the useless expense of having it in *silver*: surely it would be only commonsense to go to *paper* at once? I have seen plainly that we must go through a period of inconvertible currency of silver with a gold standard; but I have always looked upon this as an evil of the first magnitude from which we should use every exertion to escape at the very earliest opportunity. It startles and staggers me that you should say that such a man as yourself, to say nothing of the rest of the powers that be at the India Office, should have been seduced into thinking otherwise for an instant...... Have you not altogether underrated the volume of our silver currency too? A true silver subsidiary currency must, I maintain, be treated as a note currency, *i.e.*, it must be issued only in exchange for gold, and the State should be compelled to give gold for it, at convenient centres, on demand, everywhere. Only on these conditions will a silver subsidiary coinage be on a really sound footing; and upon this

and in their Despatch to the Secretary of State, dated 13th October, 1876, the Gavernment of India expressed their views on the proposal in no uncertain terms.†

The Government of India favoured the settlement of the silver question by international agreement, but they were of opinion that if an international conference failed to arrive at a satisfactory decision regarding silver, it would be necessary to stop the free coinage of silver and introduce a gold standard with a gold currenccy in India. An International Monetary Conference was convened at Brussels in 1892, but it suspended its labours on December 17, without coming to any definite conclusions. It was to meet again on 30th May, 1893, if the various Governments which were represented in it approved. But it never met again. A month before the meeting of the Brussels Conference the Secretary of State for India had appointed a Currency Committee, presided over by Lord Herschell, to consider the proposals of the Government of India. The Committee accepted these proposals with some modifications. Acting on the advice of the Herschell Committee the Government closed the mints to the free coinage of silver by Act VIII of 1893, passed on 26th June, 1893. On the same date three notifications were issued, the first providing for the issue of rupees in exchange for gold presented at the Indian mints at the rate of 16*d.* to the rupee; the second authorising the receipt of sovereigns and half-sovereigns by the Government in payment of taxes and other Government dues at 16*d* to the rupee; and the third providing for the issue of currency notes in exchange for British gold coin or gold bullion at the same rate.

---

footing even India will not even want, I believe, more than 30 crores at the outset if indeed she wants as much. You cannot seriously think we could *for a permanency* avoid calling in the 170 crores of rupees that we should have in excess of our wants. Nor can I seriously believe that an accurate thinker like yourself would deliberately consent to entrust to any Government on earth the power to issue *token coinage* at its discretion *to pass as full legal tender.* No human Government has yet existed who could be trusted with such a power."

†"We are thus quite aware that our standard of value might be enchanced without any immediate change in the body of our currency; and that we might, for a time, enjoy many of the advantages of a gold standard without undergoing the expense of introducing a gold currency. But we wholly distrust the advice and conclusions of those who think that such a state of things could be tolerated permanently, or even for any considerable length of time; in other words, that we could introduce an enhanced standard, and yet, indefinitely, escape the obligation to introduce an enhanced currency."

4. Foreign Trade, 1873—95.

By itself a fall in exchange tends to check imports and to stimulate exports. The imports are checked because the fall in exchange increases the cost, as measured in rupees, of the imported articles and reduces the profit of the importer, unless rupee prices can be raised proportionately. Exports are stimulated (other things being equal) because the same gold price received for goods sold abroad means a higher rupee price. But any serious check to imports must react on exports. Further, it is contended that the producer or exporter makes a gain only at the expense of other classes of the community, particularly the labourers, and only so long as wages and other elements of cost do not rise. In a Despatch to the Secretary of State, dated 9th November, 1878, the Government of India considered it doubtful whether the fall in exchange had exercised any beneficial effect at all on the trade of India; they also pointed out that the effect of the fall had been much obscured by seasons of extreme draught, commercial depression and political troubles.

During the whole period of falling exchange (1873—95) imports into India increased by a larger percentage than exports. The total value of imports of private merchandise in 1873-74 was 31,62 lakhs and of exports, 54,96 lakhs. In 1894-95 imports had risen to 70,16 lakhs, or 122 per cent, and exports to 108,81 lakhs, or 98 per cent. The greater expansion of the import trade as compared with the export trade is explained by the very considerable fall in gold prices which occurred during this period. It would also seem that while a stable exchange is an undoubted convenience to trade, a country's foreign trade may prosper in spite of a fluctuating exchange.

The 16*d.* rate had been chosen as it represented the exchange value of the rupee in the years immediately preceding the closing of the mints to the coinage of silver. Government hoped to prevent a fall in exchange below 16*d.* by "starving the circulation." If, while population is increasing and trade is expanding, the growth of the currency is restricted, the effect would be to reduce the volume of the currency in relation to trade. The closing of the mints was, however, followed by a further fall in exchange, and the fall continued until the rupee touched its lowest point, $12\frac{5}{8}$*d.* in January, 1895. This was due to several reasons. (1) Some 20,000,000 rupees were coined by Government immediately after the closing of the mints. This represented silver received from banks and others shipped to India before the closing of the mints. (2) Many millions of rupees were imported into British India, where the face value of the rupee was greater than its intrinsic value, from Indian States. (3) Rupees also came out of hoards. (4) There was an increase in the net circulation of notes, as can be seen from the following figures:—

NOTE CIRCULATION ON 31ST MARCH

	Lakhs of rupees.
1892-93	26,40
1893-94	30,41
1894-95	30,70

(5) Finally, the Council bills sold by the Secretary of State in 1894-95 amounted to about £ 17,000,000 as compared with £9½ millions sold in the preceding year. The effect of the increase in the sale of Council bills was to reduce the cash balances in the Government treasuries and to increase the number of rupees in circulation.

Having reached its lowest level in January, 1895, the exchange value of the rupee began to rise, and in the latter part of 1897 it nearly touched 16*d*. The years 1895 to 1898 were a period of the appreciation of the rupee in terms of gold. The exchange value of the rupee was now completely divorced from its bullion value and fluctuated independently of the price of silver.

In August, 1897, the Government of India were asked by the Secretary of State whether they were in favour of re-opening the Indian mints to silver if France and the United States of America opened their mints to silver as well as gold. The Government of India saw no very good reasons for adopting the course suggested. They pointed out that the return to silver monometallism would cause an intense disturbance of trade, and in case the experiment failed, the whole cost of failure would have to be paid by India alone. Further, international bimetallism could not succeed without the co operation of the United Kingdom, and since the United Kingdom was not prepared to change her monetary standard the best possible course for India was to link her currency system with that of the United Kingdom, the country with which her trade and financial connections were most intimate. The Government of India finally declined to give the undertaking desired by France and the United States. In view of the fact that their currency policy had succeeded in arresting the fall in exchange, their objection to re-opening the mints to the coinage of silver, which meant a reversal of their policy, was well founded.

5. Indian Currency, 1898--1914.

On 3rd March, 1898 the Government of India sent a communication to the Secretary of State urging the establishment of a gold standard in India. The time had arrived, they said, to put an end to the uncertainty and fluctuations of exchange. This communication led to the appointment of the Fowler Committee. At the time when the Despatch of 3rd March was written the exchange value of the rupee was still somewhat less than 16*d*. The Government of India proposed to raise exchange by reducing the volume of the silver circulation and replacing the silver withdrawn from the circulation by gold. The circulation was to be reduced by melting down rupees.*

The Fowler Committee rejected the proposal to melt rupees, but before the Committee made its report the rupee had risen to 16*d*., and the Government of India themselves, in the altered circumstances, would not have recommended that measure. The main recommendations of the Fowler Committee were that the sovereign should be declared legal tender throughout India at 15 rupees per sovereign, and that a gold standard with its "normal accompaniment," a gold currency, should be established in India. The Committee also recom-

---

*"The mere reduction of circulaton might be carried out in the same way in which it was effected in 1893, namely, by abstaining from drawing Council bills, until we have an accumulation of, say, twenty crores in excess of our ordinary balances. But this procedure would be both costly, and, as we believe, ineffective; in the first place, the permament locking-up of twenty crores of rupees would cost us in the interest on that amount or on the amount of gold borrowed in England during the suspension of drawings, and in the second place, the existence of this accumulation of silver coins would be a perpetual menace to the exchange market, and entirely prevent any confidence in the future of the rupee. We must not only withdraw the amount from circulation, but we must show by the method we adopt that our intention is that it should cease to exist in the form of coin, and that its place as coin is to be taken by gold. Our proposal is therefore to melt down existing rupees, having first provided a reserve of gold both for the practical purpose of taking the place of the silver, and in order to establish confidence in the issue of our measures." (*East India Currency*, c. 8840, p. 6.)

mended that "fresh rupees should not be coined until the proportion of gold in the currency is found to exceed the requirements of the public," and that "any profit on the coinage of rupees should be kept in gold as a special reserve, entirely apart from the Paper Currency Reserve and the ordinary Treasury balances."

The reserve was to be used for maintaining the exchange value of the rupee.

The Lindsay scheme for the introduction of a gold standard without a gold currency was rejected by the Fowler Committee.

The Government of India accepted the recommendations of the Committee. The sovereign was declared legal tender, the Gold Standard Reserve was instituted, and active steps were taken to encourage the use of gold as currency. Arrangements were also made for the coinage of gold in India, but the scheme was dropped when it was nearly complete in 1902.

6. The Gold Exchange Standard.

Though the Government of India fully intended to carry out the recommendations of the Fowler Committee, the Indian currency system did not develop along the lines recommended by that Committee. The main features of our currency system were essentially those of Mr. Lindsay's scheme.

The central idea of the gold exchange system is that gold is not required for internal circulation but for the payment of international indebtedness. For maintaining exchange it is, therefore, sufficient if the national currency is convertible into gold at a constant rate for meeting sterling obligations abroad. When Council bills were sold in London, gold was deposited in the reserves kept there and rupees were issued in India. The circulation contracted when bills were sold in India to meet an unfavourable balance of trade. The Gold Standard Reserve (Mr. Lindsay's "Gold Conversion Fund") was kept in London, as gold is required for the settlement of the balance of India's foreign indebtedness, and London is an important centre for the settlement of international indebtedness.

These are the main features of Mr. Lindsay's scheme. Several objections were raised against the scheme. The

Government of India in their Despatch of 3rd March, 1898, gave as one of their main reasons for deciding not to adopt the scheme that it would involve them "in a liability to pay out gold in London in exchange for rupees received in India to an indefinite extent."* Mr. Lindsay's reply to the objection was that Government would be involving themselves in a greater liability by undertaking to give gold in India. A second objection to the scheme was that the location of the Gold Standard Reserve in London would excite distrust and suspicion. "A gold reserve," said Sir James Westland in his memorandum on the scheme, "intended to support the introduction and maintenance of a gold standard in any country ought to be kept in the country, if it is to produce its full effect in the way of establishing the confidence which is almost indispensable to the success of the measure."† Mr. Lindsay, however, thought that the foreign capitalist would have greater confidence if the reserve was kept in London. "It is only people who send out capital to India that are concerned in this matter; the people who work with local capital in India will be very much in the same position as they are at present. The token rupees are all they want."‡

The chief difference between Mr. Lindsay's plan and the measures proposed by the Government of India was that the former provided for the contraction and expansion of the currency by the withdrawal of rupees from, and the issue of rupees into circulation, while the latter recommended the adoption of the principle of free in-flow and out-flow of gold. If there was no fresh coinage of rupees, the demand for additional currency caused by the growth of trade would be met by the issue of gold coins; if, at another time, the currency became redundant, the excess would be got rid of by the exportation of gold. Mr. Lindsay's plan, it was also pointed out, invested the Government with some degree of control over the volume of the rupee currency, for new rupees were to be coined from bullion bought at the discretion of the Government. 'This is not a feature of the plan," wrote Sir James Westland, "that can commend itself in principle for the regulation of the sole full legal tender currency of a country should be entirely automatic and not in any degree dependent upon the discretion of the Administration."§

The chief matters of interest in our currency history in the first decade of the 20th century are the investment of the Gold Standard Reserve in securities in London; the formation in India in 1906 of a rupee reserve as part of the Gold Standard

---

* *Para. 28 of the Despatch.*

† *East India Currency, cmd. 8810,* p. 20.

‡ *Evidence before the Fowler Committee,* Q. 4037.

§ *East India Currency, cmd. 8840,* p. 20.

Reserve; the diversion in 1907 of profits on the coinage of rupees for capital expenditure on railways; and the sale of sterling drafts by the Government of India in the exchange crisis of 1907-08.

In 1905, and again in 1906, some difficulty was felt in meeting the demand for rupees in India, and this led to the formation of a special rupee reserve which could be utilised for preventing exchange from rising above 1*s*. 4*d*. At first the reserve was held inside the Paper Currency Reserve in the form of silver ingots and then in partly coined rupees, but in 1906 it was decided to hold it in the form of coined rupees only. As the reserve was needed for preventing the rupee from rising to a premium over 1*s*. 4*d*, its name was changed to the Gold Standard Reserve, which now consisted of two portions, one held in the form of sterling securities in London, and the other in rupees in India. The rupee branch, like the sterling branch of the Reserve, consisted of the profits on the coinage of rupees.

In 1907 a Railway Committee appointed by the Secretary of State recommended that £1,000,000 out of the profits on the coinage of rupees in 1907 should be devoted to improvements for Indian railways. The Secretary of State went further than the Committee and decided that for the future one-half of any profits on the coinage of rupees should be used for capital expenditure on railways until the Gold Standard Reserve reached £20,000,000. It was intended that after that total had been reached, the whole of the profits on silver coinage should be diverted from the Reserve. The Government of India, however, thought that the sterling portion of the Reserve should be allowed to accumulate to £20,000,000 before any sums were diverted from it. In reply to a communication from the Government of India on the subject the Secretary of State said, "The danger which you allege of a fall in exchange I regard as illusory, having regard to the present conditions of trade, the amount of securities in the Gold Standard Reserve and of gold in the Curreney Reserve."* He adhered to his decision and used £1,123,000 of the profits of coinage for railway capital expenditure.

But the danger of a fall in exchange was not illusory. A severe financial crisis in America in the autumn of 1907 and the consequent monetary stringency in the money markets of the world, combined with the failure of the summer monsoon in India in 1907, caused Indian exchange to fall suddenly in November. The Exchange Banks asked Government to sell telegraphic transfers on London at 1*s.* 4*d.* per rupee, but the Government, after consulting the Secretary of State, refused. The Government also refused to give gold for export from the Paper Currency Reserve in larger quantities than £10,000 to any one individual in one day. The exchange continued to fall and on November 23 it fell to 1*s* 3-23/32*d.* Indian importers began to buy British Postal Orders for £10,000 and other large sums as a means of making sterling payments, and then, at the instance of the Secretary of State, the Government of India began to give gold for export. The Government also informed the Exchange Banks on 27th December that, should it become necessary, they would offer for tender in India sterling exchange on London. On 26th March, 1908, sterling bills were first sold in India, and they continued to be sold till 11th September, 1908. In all £8,058,000 was withdrawn during this period from the Gold standard Reserve to meet the bills.

---

* ***Report of the Chamberlain Commission, para. 36.***

The crisis of 1907-08 showed that strong gold reserves were essential for the maintenance of exchange. During the crisis £4,179,000 was withdrawn by the public from the Paper Currency Reserve, while only £250,000 was exported on private account. Another lesson taught by the crisis was " the desirability of formulating in advance and giving publicity to the policy which it is intended to pursue in a crisis." "It is almost as important," wrote the Chamberlain Commission, "that the general public should have confidence, in the determination of the Government effectively to use their resources to maintain the rupee at 1*s.* 4*d.* as it is that the Government should have the necessary resources for so doing."*

7. The Chamberlain Commission.

The Chamberlain Commission was appointed in April, 1913, to consider, among other matters, " the measures taken by the Indian Government and the Secretary of State for India in Council to maintain the exchange value of the rupee in pursuance of, or supplementary to the recommendations of the Indian Currency Committee of 1898, more particularly with regard to the location, disposition and employment of the Gold Standard and Paper Currency Reserves." The Commission approved of the measures

---

******Para. 53 of the Report of the Chamberlain Commission.*

adopted by the Government in order to maintain the exchange value of the rupee, though these measures were "less in pursuance of the recommendations of the Committee of 1898 than supplementary to them." This is shown by the fact that the Government abandoned the attempt to encourage the use of sovereigns in India, and kept the Gold Standard Reserve in London for the support of exchange. The Commission were not in favour of introducing a gold circulation in India. " The establishment of the gold value of the rupee on a stable basis," they wrote, " has been and is of the first importance to India."* Gold in actual circulation is of little use for the support of exchange. Further, they tried to show that the attempt to encourage the circulation of gold would necessarily weaken the gold reserves of the Government, and thus make it difficult for Government to maintain exchange in a time of crisis. To the objection that without gold in active circulation India's currency system would remain a " managed " system, their reply was that there was no "essential difference between the power to import sovereigns at will and the power to have gold coined into sovereigns in India." They finally concluded that " It would not be to India's advantage to encourage the increased use of gold in the internal circulation." In paragraph 76 of their report, the Commission said :—

> " To sum up, our view is that India neither demands nor requires gold coins to any considerable extent for purposes of circulation (as opposed to saving or hoarding), that the most generally suitable media of internal circulation in India are at present rupees and notes, and that the Government should, as opportunity may offer, encourage notes, while providing —and this is the cardinal feature of the whole system—absolute security for the convertibility into sterling of so much of the internal currency as may at any moment be required for the settlement of India's external obligations."[1]

As regards the Gold Standard Reserve the Commission did not fix any limit up to which the Reserve should be accumulated. They recommended that the profits on the coinage of rupees should, for the present, continue to be credited exclusively to the Reserve and that Government should aim at keeping one-half of the total Reserve in actual gold. The rupee branch of the Reserve they considered to be "responsible for much confusion and doubt as to the efficiency of the Reserve" and they recommended its abolition. They did not consider it necessary that the use of the Reserve should be regulated by statute. "But we advise," they said, " that the Government should make a public notification of their intention to sell bills in India on London at the rate of 1*s*. 3$\frac{29}{32}$*d.* whenever they are asked to do so (as was actually done in 1908 and confirmed in 1909), to the full extent of their resources. We believe that the knowledge that such exchange can be purchased at any time will do much by itself to inspire confidence, and so to reduce the actual demand for drafts on London, and to prevent that feeling of panic which is liable to accompany and to aggravate periods of financial strain. With the Reserve for the support of exchange so strong as it will, we hope, prove, if our recommendations are accepted, we do not think that there is any reason to fear that in undertaking this liability the Government of India would be in any danger of being unable to carry out their obligation."

---

[1] *Para 76 of the Report.*

Only partial action could be taken by the Government on the Report of the Chamberlain Commission, as the Great War broke out shortly after the publication of the Report in 1914. Government issued a notification in 1913 guaranteeing to issue sterling drafts on the Secretary of State In London. The silver branch of the Gold Standard Reserve was also abolished in 1914 by the transfer of six crores held in the silver branch to the Paper Currency Reserve for an equivalent amount of gold.

8. Indian Currency, 1914—1920.

Having learnt in the crisis of 1907-08 how to use their gold reserves for the support of exchange, Government were fully prepared to meet the weakening of exchange which was the immediate result of the outbreak of war. Between 6th August, 1914, and 28th January, 1916, Reverse bills were sold to the extent of £8,707,000. Reverse bills were again sold in 1915-16 (£4,893,000) and between November, 1918, and April, 1919 (£5,465,000). Apart from these temporary periods of weakness, our currency troubles during the greater part of the Great War were due, not to a falling rupee, but to a rupee whose exchange value rose to unexpected and unprecedented heights.

A gold exchange system is an artificial system in the sense that the rate of exchange under this system does not depend upon the intrinsic value of the silver coin. Before 1893, every fall in the price of silver reduced the exchange value of the rupee, but during the whole period between 1899 and 1916, the fluctuations in the price of silver exercised no influence upon the course of the rupee exchange. Exchange rose and fell according to the supply of, and the demand for foreign bills. The exchange value of our rupee was thus completely divorced from its bullion value.

But it should not be supposed that as soon as a country has conferred an artificial gold value upon its silver coin, the market price of silver becomes a matter of indifference. Violent fluctuations in the price of silver in one direction would destroy the system, or make it impossible to work. The essential feature of a gold exchange system is the use, for purposes of internal circulation, of a token coin which is convertible into gold for foreign remittance at a more or less constant rate. When a token coin ceases to be a token coin, on account of the rise in the value of its metallic content, the gold exchange system automatically ceases to exist. It thus appears that the existence of the gold exchange system and its successful operation depend upon [illegible] in the value of silver. For the purposes of the gold exchange system it is comparatively a matter of indifference whether the ratio of silver to gold is high or low, but it is not a matter of indifference whether the ratio is steady or subject to frequent and violent changes.

This aspect of the question was duly considered by the American Commission on International Exchange of 1903. In the arguments submitted by the American Commission to the foreign Commissions there was a whole section devoted to considerations regarding the price of silver. ‘Whether the ratio of the bullion price of bar silver be high or low,” wrote the American Commission, ‘is a matter of comparatively slight importance, inasmuch as the ratio could be fixed to correspond, provided the price remained steady; but if after a ratio had been once fixed the price were to rise decidedly (so that bullion value of coins exceeded their nominal value) the coins would be melted down and the system would be destroyed. On the other hand, if the price of silver were to fall very low, the burden of maintaining the parity would be heavy, inasmuch as a larger gold reserve fund might be required to maintain confidence. It is extremely desirable, therefore, especially for the countries that are somewhat weak financially, that the price of silver bullion should remain steady at a point somewhat near the ratio agreed upon.”*

In India attention had been concentrated on devising means for preventing the rupee from falling below a certain level.

---

* *Stability of International Exchange, Washington, 1903, p 124.*

The possibility of a rise in the rupee much above its gold parity was never seriously considered by Government or any one else. This is certainly curious in view of the fact that the rise in the price of silver in 1906-07 caused the gold exchange system of several countries to collapse, though it did not affect us.

The rise in the price of silver in September, 1917, to 55*d.* put an end to our gold exchange system. The rupee ceased to be a token coin—there was profit in melting and exporting it. As the price of silver continued to rise, the maintenance of the old ratio, 16*d.* to the rupee, became impossible. The rise in the cost of production of the rupee compelled the Secretary of State to raise the price of rupees. The minimum rate for Immediate Telegraphic Transfers, which on 28th August, 1917, had been fixed at 1*s.* 5*d.*, was raised to 1*s.* 6*d.* on 12th April, 1918; 1*s.* 8*d.* on 13th May, 1919; 1*s.* 10*d.* on the 12th August; 2*s.* on 15th September; 2*s.* 2*d.* on 22nd November and 2*s.* 4*d.* on 12th December, 1919.

A contributory cause of the rise in exchange was the strong demand for rupees due to the heavy balances of trade in India's favour. But even without the assistance of the favourable balances of trade the rise in the price of silver was sufficient to destroy our system If the rise had occurred, not during the war but before the war, the collapse of the gold exchange system would have been as complete as it was during the war. It should be recognised that the collapse of the gold exchange system was due, not so much to war causes, as to the simple fact that the price of silver rose above the bullion par of the rupee.

When the price of silver rises so that the intrinsic value of the token coins exceeds the face value. the gold exchange system can be re established either by raising the gold par or by debasing the token coins. The majority report of the Babington-Smith Committee, appointed by the Secretary of State in May, 1919, to consider the Indian currency situation, recommended the raising of the exchange value of the rupee to 2*s.* (gold). The chief objection to a reduction in the weight or fineness of the rupee was that it would "react gravely on the credit of the Government and possibly lead to serious social and economic consequences."* The 2*s.* rate was chosen as the Committee believed that if the exchange value of the rupee was fixed at a figure lower than this, the rupee could not be established as a token coin. The price of silver throughout 1919 was high and in February, 1920, it reached the high water-mark of 89½*d.*, and it seemed probable that for many years to come it would remain at a high level. Recoinage being impossible, a stable gold exchange standard could be ensured only by raising exchange, and raising it enough to make the rupee safe from the melting pot.

---

* *Para. 38 of the Report.*

Indian press comment on the recommendations of the majority report of the Babington-Smith Committee was unfavourable. The effect of a high exchange in stimulating imports was one of the chief grounds of objection to raising the exchange value of the rupee.

In so far as a high exchange encouraged imports, it would favour the British manufacturer at the expense of his Indian rival. "High exchange," said Mr. Ainscough, "places the British manufacturer in a more favourable condition *vis-a vis* his competitor in India. On the whole, therefore, his material interests would appear to be best served by the fixation of exchange at as high a rate as may be possible under the circumstances."

The report of the Indian Currency Committee was well-received by the British press, as may be judged from the following extract from an article on "Trade and the New Rupee Basis" in the *Times Trade Supplement* of Feb. 7, 1920.

"Apart from the possibilities of international action, the hope of arresting sterling depreciation lies in increasing production in the United Kingdom, with consequent large shipments abroad, so that our former position as a creditor country may be ultimately restored. The immediate effect of the new sterling rate of rupee exchange should be that of stimulating our exports to India, while restricting our purchases thereform. The report of the Committee referred to in detail elsewhere naturally avoids laying great stress on the point, but it is one which appeals to our manufacturers, as is shown by the favourable opinions with which the recommendations have been received in the industrial North."

The Government accepted the recommendations of the majority report of the Babington-Smith Committee. The attempt, however, to maintain exchange at 2*s.* (gold) did not succeed.

---

[*] P. 38 of Mr. Ainscough's ***Report on the Conditions and Prospects of British Trade in India at the Close of the War.***

The history of our exchange during 1920 may be divided into three periods —

(*a*) From the adoption of the report of the Babington Smith Committee in February to June 24 when Government lowered the rate to 1s 11 19/32*d* for Telegraphic Transfers and 1s 11-13/16*d*. for Deferreds

(*b*) From June 24 to September 28 when Government withdrew the sale of Reverse bills

(*c*) The period of uncontrolled or free exchange after September 28

(*a*) The adoption of the report of the Babington Smith-Committee raised the rate of exchange from 2s 1*d* to 2s 10½*d* In order to maintain the 2s (gold) rate, it was decided to fix the rates for Reverse Councils in accordance with the ratio of Rs 10 to the sovereign making allowance for the depreciation of sterling on the basis of the latest rate for the dollar sterling exchange Immediate Telegraphic Transfers were sold on 7th February at 2s 8 15/16, at the following sale the rate was raised to 2s 10 23/32*d* As the Government rate was higher than the market rate, the amounts offered at these and subsequent sales were largely over subscribed The Controller of Currency in his report for 1919-20 says

> When at the commencement of February the rate for Reverse Council went to 2s 8 15/16*d* the market rate for Telegraphic Transfers on London was quoted at 2s [illegible]*d* At these rates an overwhelming demand for sterling remittance arose and the Reverse Councils sold were insufficient to bridge the gap between the demand for sterling remittance and the demand for remittance to India ”

On February 19 £2,000,000 was offered at a difference of about 3*d* over the market rate the applications were for no less than £122 [illegible],000 In March the difference between the Bank rate for Telegraphic Transfers and the official rate was about 1½*d* and applications fell off to £[illegible] 29,000 The difference fell to about one penny in April but by the middle of May it had increased to 1 15/32*d* and applications were again received for more than £122,000,000 at the sale on [illegible]th June for a third time, while £1,000,000 was offered tenders were received for upwards of £122,000,000 the difference between the Government rate and the market rate being more than [illegible]*d*

Having regard to the fall in the market rate for sterling, Government as stated above lowered the rates to 1s 11 19/32*d* for Telegraphic Transfers and 1s 11 [illegible]/16*d* for Deferreds on June 24 They frankly abandoned the attempt to maintain exchange at 2s (gold), considering it hopeless According to the Currency Committee the rate for Immediate Telegraphic Transfers on London was to be based on the sterling equivalent of 11.30016 grains of fine gold as measured by the prevailing dollar sterling exchange The equivalent was 2s 5*d* per rupee while the new Government rate was 1s 11-19/32*d*.

(*b*) The weekly offer of sterling drafts on London continued till the end of September, when the Government withdrew the offer, not without "reserving to themselves the right of resuming these sales should circumstances in their opinion, at any time subsequently render resumption expedient"

Thus ended the heroic attempt of the Government to stabilise exchange in accordance with the recommendations of the Babington-Smith Committee.

From January to September, 1920, Reverse bills to an amount equal to £ 55,000,000 were sold, which figure constitutes a record in the annals of our finance. The bills were sold at rates which very often were "absurdly cheap compared with the market value" (*The Times*, London). " The favoured allotments of the bills " in the words of the Indian trade correspondent of the *Manchester Guardian Commercial*, "became a very grave scandal."

(*c*) Exchange fell rapidly in Octocer (1920). The situation was tersely summarised by a Calcutta merchant who, when questioned by a correspondent of an English financial paper, said that there was no exchange To support exchange Government raised the embargo on the export of wheat from October, 1920, till March, 1921. A total export of 400,000 tons was allowed. There was, in 1919-20, as compared with 1918-19, an increase of 26 per cent in the area under wheat, and of no less than 34 per cent in the yield, which was estimated at 10,092,000 tons. The wheat exports, however, did not exercise any preceptible influence on exchange. On 28th December, 1920, the rate for Telegraphic Transfers was 1s. 5*d*. per rupee, and it continued to fall until on March 9, 1921, only 15*d*. could be purchased with a rupee. Then it rose a little, but throughout the remaining eight months, till the end of the year, it remained a little below 1*s*. 4*d*. sterling (about 13*d*. gold).

The entirely unexpected fall in exchange involved our importers in serious losses and many of them refused to meet their obligations. What a fall in exchange means to importers may be shown by an example. At 2*s*. goods of the value of £1,000 are worth Rs. 10,000 When exchange falls to 1*s*. 4*d*. Rs. 15,000 must be paid to take delivery of the same goods—a loss of Rs. 5,000. It is not surprising that many importers tried to back out of their contracts. Faced with bankruptcy, they cancelled the purchases they had made.

The action of our importers in refusing to meet their obligations cannot be defended, but in many cases such refusal was due to real inability to pay. It should also be remembered that Government had accepted the recommendations of the Babington Smith Committee, and attempted to stabilize exchange, as we have seen, first at 2*s*. gold, and then at 2*s*. sterling, In these circumstances it was natural for people to think that exchange would not fall below 2*s*. sterling and when exchange fell below that rate they thought Government was to blame for it.

The fall in the rupee was accompanied by a fall in the price of silver, and there was a close connection between the two movements. The year 1920 will rank as one of the most eventful years in the history of silver and of the rupee. As we have seen, it saw the rise of the rupee to the highest level ever recorded during the last 75 years, and an equally sensational fall. The price of silver also varied between very wide limits in 1920, 89½*d.* in February and 38⅞*d.* in December. The price of silver exercised an important influence, not only on the rupee but on the currencies of other Eastern countries. For example, the highest quotation for the Hongkong Dollar in London in February, 1920, was 6s. 2*d.* and the lowest in December, 2s. 11*d.*; similarly for the Shanghai Tael, the highest quotation in 1920 was 9*s.* 3*d.* and the lowest 3s. 10½*d.* The rise in the price of silver re-established the connection between the exchange value and the bullion value of the rupee which had existed before 1893, and when the price of silver fell, the exchange value of the rupee fell with it. The fall in silver is attributed to the cessation of the Chinese demand, the absence of purchases by the Indian Government and the absence of buying by the European mints. During 1920 France and her partners in the Latin Monetary Union melted down and sold practically the whole of their silver currency. A certain section of the British press held France responsible for breaking the Eastern exchanges.

9. Exchange and the Price of Silver.

Before 1893, when the rupee was a full value coin, the

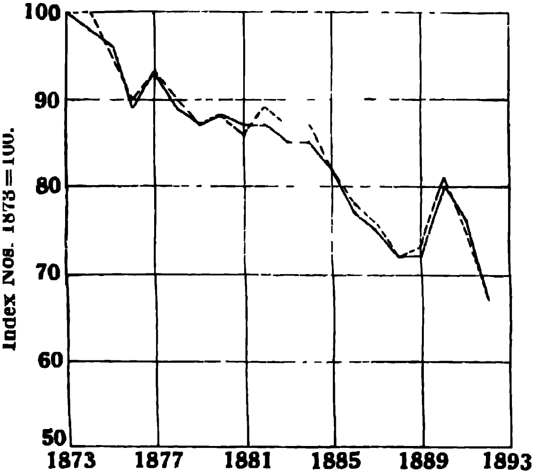


Fig. 30.

Showing how the exchange value of the rupee and the price of silver moved together between 1873 and 1892. The silver mints were closed to the free coinage of silver in 1893.

rate of exchange, or the gold value of the rupee, was determined by the price of silver in relation to gold. The bullion value of the rupee and the rate of exchange moved together, or the rate of exchange rose and fell with the price of silver. (*See* Fig. 30).

This connection did not break immediately on the closing of the mints to the free coinage of silver in 1893. Exchange continued to fall with the price of silver till 1895, and it rose with the price of silver in 1896. In 1897 exchange continued to improve while the price of silver fell. Between 1898 and 1915 exchange remained steady around 16*d*. but the price of silver fluctuated between 23·69*d*. and 30·88*d* per standard oz. (*See* Fig. 31).

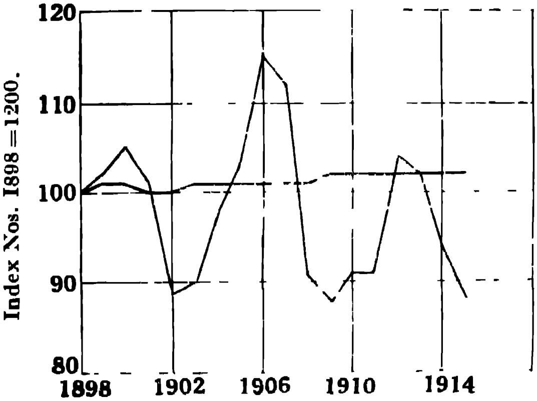


Fig. 31.

Showing the independent fluctuations of the exchange value of the rupee (the line in the centre) and the price of silver between 1898 and 1916.

The close connection between the price of silver and the rate of exchange during 1916-21 is very well brought out by the curve shown in Fig. 32. Our x, the independent variable, is the price of silver, and y, the dependent variable, is the rate of exchange. When the rate of exchange is plotted against the corresponding price of silver, the points arrange themselves on or very close to a parabola of the second order:

$$y = 27{\cdot}83 - {\cdot}6847x + {\cdot}01027x^2$$

The calculated values are obtained very simply from this equation :

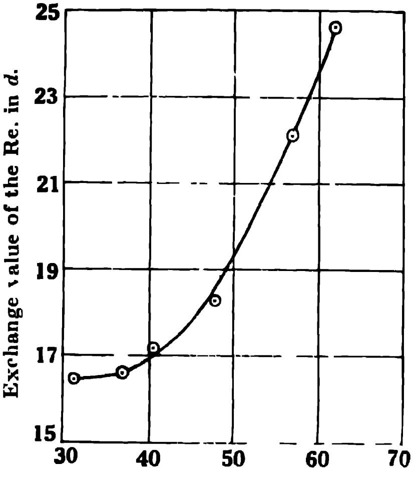


Fig. 32.

Showing the co-relation between the price of silver in *d.* per standard oz. and the exchange value of the rupee between 1916 and 1931.

The observed points are represented by circles. The equation to the fitted curve is :—

$$y = 27{\cdot}83 - {\cdot}6847x + {\cdot}01027x^2$$

Table IX. 1

	Average price of silver in London per standard oz. x	x^2	Average rate of Exchange in London at 4 months' sight. *d.* per rupee y_0	y_c	d
1916	31·3	980	16·5	16·46	−·04
1917	40·9	1673	17·1	17·01	−·09
1918	47·6	2266	18·3	18·51	+·21
1919	57·0	3249	22·1	22·17	+·07
1920	61·4	3770	24·6	24·51	−·09
1921	36·9	1362	16·6	16·55	−·04
					+·28 −·27

Source : *Statistical Abstract for British India, First Issue, pp. 236-39*

$$y_c \text{ for } 1916 = 27{\cdot}83 - (6843 \times 31{\cdot}3) + (980 \times {\cdot}01027)$$
$$= 27{\cdot}83 - 21{\cdot}43 + 10{\cdot}06$$
$$= 27{\cdot}83 - 11{\cdot}37$$

$= 16{\cdot}46$, **and so on for other years.**

The last column shows the deviations of calculated values from observed values. They are inconsiderable, showing the close relationship between the rise in the price of silver and the rate of exchange.

The fluctuations in the price of silver since 1925 have exercised no influence on the rate of exchange. Exchange has been maintained at 18*d*. sterling, but after 21st. September, 1931 sterling depreciated in terms of gold, and so did the rupee.

10. The Gold Bullion Standard.

We have seen that the attempt to stabilise exchange at *2s*. failed in 1920. Soon after the publication of the Report of the Babington-Smith Committee economic conditions began to change so rapidly as to make the proposals of the Committee regarding exchange stabilisation impracticable. There was, in the first place, as we have seen, a rapid and unexpected fall in the price of silver, and in the second place, the beginning of a heavy fall in commodity prices all over the world.

The rate of exchange for Calcutta Telegraphic Transfers on London (average of daily rates) was 2*s*. 0*d*. in 1920 ; it fell to 1*s*. 4*d*. in 1921 and 1*s*. 3*d*. in 1922. Exchange gradually rose after July, 1922. The average of daily rates for each month of the year 1922 was less than 1*s*. 4*d*.; but in 1923 it never fell bellow that level, and in December, 1923, it exceeded 1s. 5d. The average rate was 1*s*. 6*d*. for the first nine months (January to September) of 1925. In August, 1925, a Commission, with Mr. Hilton-Young as President, was appointed to examine and report on the Indian exchange and currency system and practice. This was the second Royal Commission, as the Babington-Smith Committee was the third Committee, which, since 1892, had been called upon to make proposals regarding Indian currency reform.*

The Currency Commission recommended the adoption by India of the gold bullion standard. The gold exchange standard was definitely condemned by the Commission as unsatisfactory. We have the important admission that the gold exchange standard does not work automatically, and that it is not elastic. "The automatic working of the exchange standard," says the Report (para. 16), "is thus not adequately

---

	Currency Committee or Commission	***Year of appointment***
1	**Herschell Committee**	**1899**
2.	**Fowler Committee**	**1898**
3.	**Chamberlain Commission**	**1913**
4.	**Babington-Smith Committee**	**1919**
5.	**Hilton Young Commission**	**1925**

provided for in India, and never has been". The Report refers to "the absence of contraction on occasions when the currency authority has had to sell sterling exchange." In 1920 the consequences of this were "disastrous." And the report adds :

> "There must ever be danger of such disaster under a system which does not automatically enforce contraction of internal currency concurrently with depletion of Reserves."

These remarks would undoubtedly be read with interest by certain official apologists who, like Mr. Findlay Shirras, regard the gold exchange system as an "improved gold standard," as "a system of money which has become and must become increasingly popular," and who were lost in admiration of "the beautiful elasticity of our currency system."*

The main recommendations of the Currency Commission may be briefly summarised as follows :—

When the gold bullion standard is introduced, the currency will consist of silver rupees and notes, which will be directly convertible into gold bullion. There will be no gold in circulation.

The paper currency will cease to be convertible by law into silver coin (para. 69).

The chief feature of the gold bullion standard is the convertibility of token money directly into gold bullion for all purposes. The Currency Commission attached great importance to it. Under the old system paper money was convertible by law only into silver rupees, which are themselves token coins. By making notes convertible by law into gold bars for all purposes, "a more solid right of convertibility is attached to them than they have ever had since silver ceased to be a reliable standard of value" (para. 69). Para 61 of the Report states :

---

* *Indian Finance and Banking* 1920, p. 37.

"The Indian currency system of to-day is, however, quite as automatic as it was previous to the closing of the Mints to the free coinage of silver." (*Datta's Report on prices*, para. 228).

The Chamberlain Commission of 1914 denied that the gold exchange system gave India "an artificial and managed currency." "It is not in fact possible for the Government of India," says the Report of the Chamberlain Commission (para. 66), "to manipulate the currency, and they cannot add to the active circulation of the currency except in response to public demand."

> **“For the purposes of India this standard [gold bullion standard] fulfils the essential condition, that it should be not stable only, but simple and certain. It provides the token currency with a right of convertibility that is intelligible to the uninstructed and with a backing that is tangible and visible.”**

This recommendation of the Currency Commission has been misunderstood. It has been thought that under the gold bullion standard token money will be freely convertible into gold, not merely for export, but for internal purposes. It was easy to make this mistake, for the ‘uninstructed’ could not be expected to see the ‘tangible and visible’ backing of the token currency, unless token money was freely convertible into gold for internal use.

In *theory* token money under the gold bullion standard will be convertible into gold for *all* purposes; in *practice* it will be convertible into gold only for export.

In para. 64 of the Report it is explained that gold will not be sold by the currency authority cheaper than the market rate. The wholesale bullion market is not to be destroyed. If the currency authority were compelled to sell gold at a price exactly corresponding to the par value of the rupee (*i.e.*, cheaper than the market rate which includes the cost of import), the consequences will be serious:—

> **“Apart from practically destroying the wholesale bullion market the currency authority would inevitably become involved in the performance of a task which does not properly belong to it. Its primary duty of maintaining the monetary unit at parity with gold would be made far more difficult.”***

Now suppose that a large amount of gold was wanted for internal use and the gold reserves of the Bank began to disappear. To meet the loss of reserves owing to an internal drain the Bank would be forced to restrict credit. This, says Schedule I, “would have highly injurious reactions on the internal economy of India, and should consequently be avoided.” Therefore,

> **“It is required so to frame the Bank’s obligation to sell gold as to make it unprofitable for gold to be bought from it except in circum**

*** Schedule I is even more explicit.**

“The reserves,” it says, “exist to assure the maintenance at parity with gold of the purchasing power of the monetary unit, *i.e.*, to meet purely monetary needs. It is evident that if they can be drawn upon in the ordinary course to satisfy non-monetary purposes to anything but a minor extent the Bank’s primary task, *viz.*, to maintain the external value of the currency, will be jeopardised.”

stances in which it would be profitable to do so for purely monetary purposes."

"The purely monetary purposes" referred to in Schedule I relate to gold for export, and not to gold given for hoarding or for making ornaments. Gold bullion cannot be used for the purpose of circulation within the country, and it is used for monetary purposes only when it is sent abroad in settlement of foreign obligations.

It is thought that even when the balance of trade is in India's favour (and consequently, the rate of exchange above 1s. 6*d*.) the currency may need to be contracted, and the Reserve Bank must sell gold to the public in order to reduce the volume of our token currency. This is not how the Currency Commission have argued. In para. 115 of the Report they state :

"And if the exchanges are stable, and keep within the upper or lower gold points set by the fixation of the price at which the Reserve Bank undertakes to buy and sell gold, it will not be called upon either to buy or sell gold."

The Reserve Bank will be called upon to sell gold only when, as the result of an adverse balance of trade, the exchanges turn against India.

It should be clear that so far as the ordinary holder of rupees or notes is concerned, he would not be able to convert them into gold. When he wants gold he must buy gold in the bazar, as at present.

It will be seen that from the point of view of convertibility there is no fundamental difference between the gold exchange system and the gold bullion standard of the Currency Commission. The essential feature of both is that the internal currency consists of token money, which is convertible into gold for the payment of international indebtedness.

For the satisfactory working of the gold exchange system it is not essential that notes should be printed on silver. When our paper money ceases to be convertible into silver rupees, we shall have what is regarded as the "ideal" currency system, that is, a currency system in which the internal currency consists of paper, convertible into gold for the

---

*** "In applying Ricardo's proposals to India," wrote Mr. Lindsay, "little modification is necessary either of the proposals or of Indian currency arrangements. The only change in the proposals will be the substitution of sterling money for gold bars, and rupees for paper money." (*Ricardo's Exchange Remedy* by A.M.L., p. 8.)**

settlement of foreign obligations. Para. 56 of the Report says :—

> **" It is argued by many who advocate the introduction of a gold currency that a token currency of notes inconvertible for internal purposes is the ideal end towards which India should work. The scheme outlined below carries India very far along the road towards that end. . . , ."**

A Memorandum on a gold standard for India was submitted to the Commission by Mr. H. Denning, Controller of Currency. The Memorandum represented the result of discussions between Sir Basil Blackett (Finance Member, Government of India), Mr. McWatters (Secretary to the Government of India, Finance Department) and Mr. Denning, but it was not put forward as an expression of the views of the Government of India.

The two irremovable defects of the gold exchange standard, as it functioned before the Great War, were thus stated in the Memorandum :

1. The currency system was liable to break down when the price of silver rose above the bullion par of the rupee.

2. When Reverse Councils were sold, Government could arrange, by borrowing from the Gold Standard Reserve, to meet sterling payments on account of the Reverse Councils without affecting the amount of money in circulation.

The second defect means that currency contraction did not take place automatically, but depended on the will of the Government. For example, Reverse bills of over 7 crores in value were sold in 1918-19, but the amount of currency contraction effected was *nil.*

In 1919-20-21, Reverse bills of over 47 crores in value were sold, the currency contraction amounting to about 35 crores.

It was pointed out in the Memorandum that these two defects could be remedied only by the adoption of the gold bullion standard or the gold standard with a gold currency

---

Dr. Edwin Cannan, in his evidence before the Currency Commission, thus commented on the difference between the gold exchange system and the gold bullion standard :

" I think when you get on to the bare bones of the gold exchange system there is very little difference between the two ; some people say that this country (England) is on a gold exchange standard system now. " Evidence Vol. V. P. 162, Q. 18,210.

*** *Appendix to the Currency Report,* 1925-26, II. 48.**

in circulation. The Memorandum thus commented on these alternatives :—

> **" Undoubtedly the ideal to be aimed at is the system now in force in Great Britain, under which the note is the sole legal tender in circulation, and the gold value of sterling is stabilised by the statutory obligation imposed on the Bank of England to buy and sell gold at rates corresponding roughly to the par of exchange. It is impossible, however, to hope that conditions in India will for generations be such that a full legal tender metallic currency will be no longer necessary. If, therefore, a gold currency is not introduced, defects in the Indian currency and exchange system must remain indefinitely. There is, moreover, reason to suppose that the introduction of a gold currency would hasten the attainment of the ideal system, as the fact that notes were convertible into gold and not merely into an over-valued silver coin, would tend to increase confidence in the note-issue and to decrease the demand for metallic currency. The conclusion is that the only way of remedying all the defects in the system within a reasonable period is by establishing a gold standard with a gold currency in circulation."**

A practical scheme for the introduction of the gold currency standard by stages was outlined in the Memorandum. The estimated amount of gold required for the purpose was £103 millions ; of this amount £15 millions was required at the time of the initiation of the first stage, a further £35 millions within a year, and the remainder over a period of ten years.

The scheme was rejected by the Currency Commission.

The Government accepted the main recommendations of the Currency Commission, and in 1927 the exchange value of the rupee was fixed at 18*d* gold.

The question of a gold currency is no longer a practical one. But it is a fact that India would prefer an automatic system of currency, based on a circulation of gold coins, to the gold bullion standard of the Hilton Young Commission A genuine demand for gold for currency purposes existed in India before the Great War After the sovereign became legal tender (1899) the import and absorption of sovereigns into circulation increased rapidly, and official inquiries showed that the sovereigns were used as money.

The attitude of the people of India towards gold is different from that of their Government. This is shown not only by the Government view of gold exports but by Government currency and exchange policy between 1901 and 1920.

The gold exchange standard was recommended for India by Mr. Lindsay chiefly on the ground that under this system the demand for gold is reduced to a minimum. On page 12 of his pamphlet entitled *Ricardo's Exchange Remedy* (1892), Mr. Lindsay thus explains the advantages of the gold exchange system.

"*In this way a gold standard might be established in India without risk and with considerable profit to the State and the Bank of England, and with advantage to the London money market. There would be no increase in the demand for gold, and little decrease, if any, in the demand for silver.*"

The main object of the sale of Council Bills by the Secretary of State for India in excess of the Home Charges was to reduce the movement of gold from England to India.* Again, in 1920, one of the reasons for fixing the exchange value of the rupee at 2s. (gold) was to lessen India's demand for gold.*

---

* Mr. O. T. Barrow, who gave evidence before the Chamberlain Commission as the representative of the Government of India, frankly told the Commission that it was "desirable to check the excessive importation of gold into India." If gold was allowed to come to India, it would be used for currency or for hoarding. In eiher case, said Mr. Barrow, "if it went into the country and stayed there, it would mean a further drain of gold from England. It must mean a further drain, whichever it is."

Another witness, Mr. W. B. Hunter (of the Presidency Bank of Madras) who gave evidence before the same Commission, thus replied to Sir James Begbie's question regarding the Council Bill system :—

Q.—You also favour the Council Bill system with the object of reducing the movement of gold coin from Europe to India ?—This is so.

Q.—Your object is to prevent gold coin coming into india ?—To prevent unnecessary gold coin being withdrawn from London at times of pressure, as I hold that a tight money market reacts on the Indian export trade.

Q.—Your object is to prevent disturbance of the London money market ?—That is my chief object.

Q.—You propose to achieve that by sale of bills in London to the extent that would be sufficient for that object ?—Yes.

Mr. Lindsay before the Fowler Committee of 1898 :

Q.—3598. Do you think that this [gold currency for India] would, under the circumstances, lead to an injurious appreciation of the standard of value ?—I think, myself, that the two uses of gold combined, for hoarding and for internal circulation, would be so enormous that it would create a serious disturbance in the London money market.

11. The 18*d*. Gold Rate.

Exchange was fixed at 18*d*. gold in 1927. In the light of what has happened since then, it is not uninteresting to study the case for the 18*d*. gold rate as presented to the Indian Legislative Assembly by the Finance Member of the Government of India.

The Finance Member advanced 11 arguments in support of the 18*d*. gold rate, which are reproduced below .—

(1) The silver rupee has no natural value other than the value of the silver bullion which it contains. Any other value than this for the silver rupee must be artificial.

(2) No one ratio for the rupee can possibly be permanently more advantageous for India than another. The question is not and never can be whether one particular ratio, say, 1s 6*d*., is permanently more advantageous for India than some other ratio, say 1s. 4*d*. or 2*s*.

(3) All arguments based on the belief that the fixation of one particular ratio is definitely and permanently advantageous or disadvantageous to this or that interest are entirely irrelevant.

(4) A rising rate of exchange tends temporarily to assist imports and discourage exports , but this tendency is often counteracted, in whole or in part, by movement in world prices, as happened in the case of India from 1922 to 1925.

(5) A falling rate of exchange has the opposite tendency But this again is often counteracted by external causes affecting the level of prices.

(6) A fluctuating rate of exchange restricts the volume of trade and commerce and subjects both the producer and the consumer to

---

*"The fear is thought to exist that under free conditions India's absorption of gold would diminish the chances open to other countries of obtaining gold to restore the value of their insufficiently backed paper issue. The amount of gold going to India would depend on the extent to which silver purchases by the Indian Government displace private imports of gold as a means of balancing Indian trade ; a higher price limit would secure a larger supply of silver, thus diminishing the gold taken by India. It follows that the fear of undue gold absorption would be, *pro tanto*, met by the proposal to fix a high rate of exchange, which is recommended......below as a protection of the masses in India from the effect of high world prices arising out of the War. The volume of the currency would still be automatic, but the limits of the Government's control over the proportions of its constituent elements as between silver and gold would be extended, *pro tanto*, by fixing a higher rather than a lower limit to the Government's buying price of silver." (*Memorandum submitted to the Indian Currency Committee of 1920, by Mr. F. H. Lucas, Financial Secretary, India Office.*)

losses without necessarily profiting the middleman, who is often unwillingly made a speculator when he would prefer to do safe business.

(7) A stable exchange is what everyone wants and is to everybody's interests.

(8) In considering the fixing of the ratio at the present time, the first question must be : " Is the time ripe for fixing the ratio "? The Currency Commission are unanimous in saying that it is.

(9) The only other relevant question is : "At what ratio can stability of exchange be most easily and quickly secured "? The Commission are unanimous on this point also.

(10) The Commission are unanimous in saying that if prices have adjusted themselves in a preponderant degree to the ratio of 1*s.* 6*d.*, it is in the interests of India that the ratio should be fixed at 1*s.* 6*d.*

(11) If it is accepted that the time is ripe for stabilising the rupee, the only point open to argument is whether prices have adjusted themselves in a preponderant degree to the 1*s.* 6*d.* ratio. This is a question of fact to be examined as such.

We may accept points (1), (6) and (7) without discussion. The gold value conferred on the rupee was wholly artificial, and, other things being equal, a stable exchange is better than an unstable exchange :

Sir Basil Blackett's explanation of points (2) and (3) is so interesting as to deserve reproduction :

" Nothing is gained by the Indian exporter or, any one else, if he receives in payment for what he sells a larger number of rupees of less value instead of a smaller number of rupees of greater value, if the gold or commodity value of what he receives remains unaltered. This is exactly what happens as the following analysis will show :

A* sells produce with a world market or destined for export for 1,333 rupees with exchange at 1*s* 6*d*, for which if exchange were 1*s.* 4*d.* the would get Rs. 1,500. The contention is that he loses 167 rupees owing to exchange being at 1*s.* 6*d.

But it is agreed by all that under a gold standard the only thing that matters is the gold value of the money which a man gets for what he sells and pays out for what he buys. It is important to remember that though for convenience we talk of stabilising at 1*s.* 4*d.* what we mean to do is to fix the gold value of the rupee at 8·4751 grains per rupee The habit of talking of the rupee in relation to its sterling value is responsible for more than one fallacy in the Currency League's propaganda. The theory of a gold standard is that all money transactions take place either in gold or in legal tender notes or coins with a fixed gold value, and all prices are gold prices. Now, with the rupee at 1*s.* 6*d.*, the rupee has a value equal to 8½ grains of gold. With the rupee at 1*s.* 4*d.*, the rupee has a value of 7½ grains of gold. I ignore the decimal points for convenience. Now our friend *A* at present with the rupee at 1*s.* 6*d.*, receives 1,333 rupees, each worth 8½ grains of gold With the rupee at 1*s.* 4*d.*, he receives 1,500 rupees each worth 7½ grains of gold. A simple sum in multiplication will show that in each case he receives rupees worth exactly the same amount in gold, *viz.*, approximately 11,300 grains of gold. If *A*

desires to spend the whole of his rupees in buying gold, he gets exactly the same amount of gold whatever the exchange rate; since all values under a gold standard are gold values, determined, that is, by the value of gold, the rupees he receives in either case give him exactly the same power of purchasing commodities whatever the commodity he desires to purchase. (An Honourable Member: "Question"). It is easy enough to question arguments but it is difficult to question facts."

The Honourable Member who interrupted the Finance Member was evidently not satisfied with the explanation. Nor would any student of economics. The 'fact' mentioned by the Finance Member cannot be questioned. The gold value of 1,500 rupees, when exchange is 16*d.* gold, is equal to the gold value of 1,333 rupees when exchange is 18*d.* gold. In both cases the rupees received by the cultivator are worth approximately 11,300 grains of gold. If no further questions are asked, the cultivator is neither a gainer nor a loser by the fixation of exchange at the higher or the lower figure.

12. How the Cultivator gains.

But when the cultivator receives 1,500 rupees (instead of 1,333 rupees) in exchange for his produce sold at 16*d.* gold, does he say to himself: " The extra 167 rupees mean nothing to me, for the gold value of Rs. 1,500 at 16*d.* is just equal to that of Rs. 1,333 at 18*d.*?" Is the cultivator in the village interested in the gold value of the rupee?

The extent to which the cultivator is a consumer of imported goods is so small as to be negligible. He consumes kerosene oil and, in some parts of the country, a little foreign salt. For the most part he dresses in khaddar, the product of his village hand-loom. When he pays an instalment of debt to the *mahajan* or the co-operative credit society, again he is concerned with the number of rupees, not their gold value.

The gold value of the rupee has little to do with the cost of production of crops. The main elements of cost are Government dues and bullock labour. Bullocks are a home-grown commodity, whose price is reckoned in rupees. Government dues, similarly, are paid in rupees, which is also true of charges when paid in cash, for the winnowing or harvesting of crops. Finally the cultivator's implements are, in most cases, indigenous, not foreign.

It would appear that the cultivator is not concerned with the gold value of the rupee. What he wants is a sufficient number of rupees to meet his charges. If now he obtains in exchange for his produce Rs. 1,500 instead of Rs. 1,333, he is a clear gainer to the extent of Rs. 167. After paying Government dues and meeting other charges in connection with the raising of crops, the cultivator would be left with more money in his pockets for his personal expenses.

The cultivator would certainly get the same amount of gold for his rupees, whatever the rate of exchange was, but it is emphatically not true that " all values under a gold standard are gold values." Under a gold standard all values are not determined by the value of gold—only such values are determined by the value of gold as have some connection with exports and imports. Gold is different from other commodities. Owing to its great value in small bulk the cost of transportation of gold is small and under the influence of a world-wide demand, it moves quickly from one country to another. Other commodities move with more difficulty. But in the present case we are concerned with commodities which do not move at all. Our plough-bullocks do not enter into international trade—there is no competition between them and British plough-bullocks. Our village menials, carpenters, shoemakers, and agricultural labourers do not enter into international trade either. It may be said that water-rates and the land revenue have a gold value in the sense that if the rate of exchange fell, the burden of the 'Home Charges' would increase, and heavier taxation would have to be imposed all round. But, conceivably, the situation may be met by reducing the Home Charges or economies in Government expenditure; conceivably more revenue may be got out of other sections of the population and the cultivator left alone.

13. Exchange and Prices.

We may now consider points 4 and 5 according to which the artificial exchange stimulus to exports or imports is counteracted by 'movements in world prices'. It would be simpler and more to the point to consider adjustments in India to a rising or falling exchange.

If exchange is rising, it becomes cheaper to pay for imported goods, and imports increase, which may injure home industries. But in the long run, home manufacturers will increase their power of competition by reducing costs of production and introducing improvements in organisation. The weaker businesses will be eliminated; but those which survive will offer effective competition to imports In the long run, then, when exchange becomes stable, the stimulus to imports ceases to operate

In the beginning a rising exchange may restrict exports, but if home producers of food stuffs and raw materials reduce their costs of production, the handicap imposed upon them will be temporary.

A falling exchange would restrict imports by making them dearer. The home manufacturer is benefited thereby, for he can charge higher prices for his goods, or undersell his foreign rivals. But this advantage will disappear when his wages and other elements of cost rise Similarly, the exporter makes a gain when exchange is falling, for he receives a greater number of rupees for the same amount of produce exported. But in the long run his costs of production will rise So long as the costs of production do not rise, the exporter makes a gain, but at the expense of other factors of production. Giving evidence on this point before the Fowler Committee on Indian Currency (1898) Dr. Marshall insisted that it was incorrect to say that a falling exchange gave a bounty to employers, and that any stimulus to exports relatively to imports which was not accompanied by lending to foreign countries, or returning loans, must necessarily lead to an equal reduction of exports relatively to imports.

When these adjustments are complete, and prices are stabilised at the new gold value of the currency "there is," as Sir Basil Blackett said, "and can be neither loss nor gain to the producer or the exporter or any one else."

When the gold value of the rupee rises rupee prices will adjust themselves to world gold prices by falling, if the world gold prices are stable. If the gold value of the rupee is falling, the adjustment will take place through a rise of rupee prices, world gold prices remaining stable.

The Finance Member did not doubt that rupee prices had adjusted themselves to the 18*d* gold rate If, under such conditions, there was a return to a lower rate, say 16*d*, adjustment would mean a rise of rupee prices by 12½ per cent, a rise in the cost of living by the same amount, and a reduction in real wages by 11 per cent "Does the House want to reduce by 11 per cent the real wages of all wage-earners, agricultural and industrial," asked Sir Basil Blackett, "of all clerks and shop hands in private employ, of postal employees, railway employees, to reduce the value of every fixed income by 11 per cent ?" The answer of the House was 'No.' The 18*d.* gold rate was duly placed on the Statute Book. Sir Basil Blackett himself looked forward to the future with hope and confidence.[1]

The influences which were expected to keep world prices steady ceased to work almost immediately, and influences which were to lower prices began to make themselves felt. Businessmen and traders who were bidden by Sir Basil Blackett to look forward to normal conditions generally and expanding opportunities in every direction were soon to be overwhelmed by a crisis of extraordinary intensity and still more extraordinary persistence. It would seem that in spite of the *de facto* 18*d.* gold rate, Sir Charles Addis and Calcutta exchange bankers who supported him were right after all in thinking that it was open to question whether gold prices and conditions generally the world over had sufficiently settled down in 1927 to justify the stabilisation of rupee exchange.[2]

---

[1] "And what does the admission, that prices have adjusted themselves in a preponderant degree, mean ? It means that there is no more reason to-day for disturbing the 1s 6*d.* ratio than there was for disturbing 1s. 4*d.* ratio in, say, 1907. It means that we have come to the end of a long struggle to restore equilibrium to currency and exchange and prices after the war upheaval. It means that the supply of currency has been brought into harmony with the demand at the existing level of prices and internal prices into harmony with each other and with world prices. It means that businessmen and traders of all kinds can go ahead, once the last remains of uncertainty are removed by placing 1s. 6*d.* on the Statute Book with confidence and hope to expand their activities, to launch out into new and promising ventures, without any fear of seeing all their bright hopes upset by the vagaries of exchange and with a prospect of reasonably stable prices ; also knowing as they do that strong influences are at work to keep world prices already at about the present level, they can look forward to normal conditions generally and expanding opportunities in every direction."

[2] In a pamphlet entitled ' Indian Currency Reform", published in 1926 the present writer pointed out that the fall which had occurred in rupee prices from January to September, 1925, was in sympathy with the fall in English and European gold prices and summarised his conclusions on the question of the 18*d.* gold rate thus :

"It would thus seem that, on the basis of the information that is available, it is impossible to dogmatise, as the Currency Commission have done, about the adjustment of Indian prices to the rate of exchange; and if the proposal to stabilise the rate of exchange at 1s. 6*d.* gold rests on this supposed adjustment, it obviously rests on a very weak foundation" (p. 63).

In fact there had been no adjustment of Indian prices to the 18*d.* gold rate in 1925. The evidence on the basis of which the Currency Commission of 1925 concluded that adjustment was complete, was no evidence at all.

In a study of the price movement in relation to the exchange movement, it is always desirable to investigate the causes of the rise or fall in the prices of individual commodities. The rise or fall of prices is not always due to changes in the rate of exchange, and even if the price of a commodity falls at a time when exchange is rising, the amount of the fall in price being equal to that of the rise in exchange, the causes of the fall may be wholly unconnected with the rise in exchange. Hence the importance of the study of price fluctuations in the case of individual commodities.

14. Exchange and Prices, 1861-1891.

A detailed study of the movements of Indian prices from 1861 to 1891 was made in connection with the Indian currency reform of 1893[1] The subject also attracted the attention of a foreign writer, Dr. Paul Arndt, whose work *Die Kaufkraft der Rupie*[2] may still be read with interest. At the very outset Dr. Paul Arndt says :—

"So far as the available material permits, I shall try to answer the question, whether the price level has risen within the 25 years in question (1870—95), *for each important commodity separately* ; it will then become so much the easier to recognise the causes to which, on the whole, the fluctuations in prices are to be ascribed" (italics Dr. Arndt's).

The general conclusion was stated thus :

"No sensible man in India would insist that the Government should immediately proceed to inflate the currency with the definite object of raising prices in the country above the level of world prices, so as to reduce the exchange value of the rupee to 1*s.* 4*d.* But it is the greatest mistake to think that because 1*s.* 6*d.* is the prevailing rate, little difficulty will be experienced in maintaining exchange at that rate in the future. Let us gain some more experience of the 1*s.* 6*d.* exchange before permanently fixing the exchange value of the rupee at this rate.

"What I have said in the preceding Chapters must not be interpreted as an argument in favour of the immediate stabilization of exchange at 1*s.* 4*d*, ; *but it is a strong argument for waiting*" (*italics of 1926*. p. 83).

[1] *Papers relating to Changes in the Indian Currency System* Simla, 1893, pp. 31-52.

[2] Tuebingen. Verlag der H. Laupp'schen Buchhandlung.

Similarly, O'Conor, in his paper on prices, written in 1892, undertakes a detailed examination of the fluctuations in the prices of articles of import and export, and of wholesale as well as retail prices.

This is the only right and proper method of investigation in such a case. It is most remarkable that the Royal Currency Commission of 1925 should have recommended the stabilization of the rate of exchange at 1s. 6*d*., mainly on the ground that Indian prices had become adjusted to the rate of exchange, without having considered whether, in the case of the larger number of the more important commodities, such adjustment had taken place. The Currency Report does not contain a single reference to the price of any article, whether of import or export.

15. Exchange and Prices, 1924—25.

The Currency Commission confined their examination to a study of index numbers of prices. For Indian prices they took the Calcutta series of index numbers as their guide; for 'world gold prices' they took an average of index numbers of the United Kingdom and the United States. Their examination showed that 'from Oct. 1924 to Sept. 1925 there was a rapid and violent downward movement of the rupee price level which was not the reflection of any similar movement in world prices' (para. 86). The conclusion appeared to them 'almost irresistible that the marked fall in rupee prices in the first half of 1925 represented largely the tendency of those prices to adjust themselves to the rise in exchange, the greater part of which had occurred in the preceding year', (para. 187).

There is no question about the fall in rupee prices. The Calcutta index number fell from 176 in Dec. 1924 to 158 in Sept. 1925. But did world gold prices remain stationary during this period ?

The course of gold prices in the United States and in European countries in 1925 was not the same. While prices in the United States remained fairly steady, gold prices in Europe fell appreciably. An average of price index numbers of the Board of Trade and the Bureau of Labour (United States) is misleading. To obtain a general view of world gold prices we must study the movement of gold prices in the more important countries of the world.

The following table shows the index numbers of wholesale gold prices in 1925 in the United States and 14 countries of Europe :—

International Index Numbers of Wholesale Prices in Gold.
(1913-14=100).

Year 1925

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.
Germany Stat. R. A.	138	137	134	131	132	134	135	132	126	124	121	122
Great Brt. Board of Tde.)	168	166	163	161	159	158	158	157	156	154	153	152
France (Stat. Gen.)	144	138	140	139	135	130	136	136	136	125	121	121
Belgium—(Min. d. L'Ind. et du Trav)	150	143	145	141	137	131	134	133	130	135	133	133
Netherlands—(Centr. Bur. v. d. Stat)	161	159	154	150	151	153	155	155	155	154	154	155
Denmark (Finanstid)	156	152	151	150	151	156	163	156	147	146	148	145
Sweden—(Komm. Koll).	170	170	169	164	162	161	161	159	157	154	155	156
Norway—(Oek. Rev)	159	160	159	163	164	175	165	178	179	168	165	165
Switzerland (Lorenz)	171	170	166	163	162	162	161	160	159	157	157	155
Italy—(Bachi)	142	144	139	140	137	131	131	142	152	147	149	150
Spain—(Inst. Geogr. y Estadist) .	140	141	142	141	141	141	141	137	138	139	137	137
Austria—(Stat. Nachr.)	148	148	144	140	139	143	138	132	128	128	125	125
Czecho-Slovakia (Stat. Staatsamt)	152	150	148	147	145	147	145	145	144	142	142	141
Poland (Official)	120	121	122	119	118	119	120	107	110	109	101	88
United States America—Bur of Labour	160	161	161	156	155	157	160	160	160	158	158	156

The figures have been calculated in the case of each country with reference to pre-war prices; they are comparable only in regard to their movement.

(Source : *Wirtschaft und Statistik, Berlin, published by the Government Statistical Department), 1 February, Heft 1926, p. 84.*)

The index number of the United States for September was the same as that for January. But in 12 out of the 14 countries of Europe prices in September 1925 were lower than in January. The extent of the fall in different cases was as follows : -

Fall in Gold Prices in September 1925 as compared with January 1925 :—

Germany	12	points
Great Britain	12	,,
France	8	,,
Belgium	20	,,
Netherlands	6	,,
Denmark	9	,,
Sweden	13	,,
Switzerland	12	,,
Spain	2	,,
Austria	20	,,
Czecho-Slovakia	8	,,
Poland	10	,,

The explanation of the fall in Europe of gold prices in 1925 is "increasing economic stagnation in most of the European countries"[1] in contrast to the favourable conjuncture in the United States. Prices had been rising in the year 1924, and the rise of prices was partly speculative. The fall of prices in 1925 was in some measure due to a reaction against inflated prices, and mainly to increased production. The revival of trade in the United States raised prices in the month of July in that country to the level of January. but "increasing depression" in Europe continued to lower prices in the great majority of European countries.

It will have to be admitted that the downward movement of Indian prices was in sympathy with the world gold prices. In these circumstances all talk of adjustment of rupee prices to the 18*d*. gold rate is meaningless.

16. The Sterling Exchange Standard.

The abandonment of the gold standard by the United Kingdom in 1931 was due to the realisation that at the rate of £ = 4·866, the pound was over-valued. In theory no rate of exchange is permanently advantageous because, in the long run, costs and prices are adjusted to the rate of exchange. But the process of adjustment, when a currency is overvalued, is extremely painful; it is rendered difficult by the comparative inelasticity of costs, resistance on the part of workers to cuts in wages, and the high level of taxation which has to be maintained when the burden of public debt is heavy. Adjustment through devaluation or depreciation is the easier and the more sensible course.

---

[1] ***Wirtschaft und Statistik*, 1 Heft 1936, pp. 84-85.**

Our Government made the discovery that the rupee was overvalued at 18*d.* gold precisely on the same date on which the United Kingdom abandoned the gold standard.

Since the 18*d.* sterling rate is being maintained, India may be said to be under the sterling exchange standard. In war-time all dealings in foreign exchange are strictly controlled by Government. But before the outbreak of the present war sterling was freely bought and sold. On the establishment of the Reserve Bank, the duty of maintaining the 18*d.* sterling rate devolved on our Central Bank. The Reserve Bank Act provides for the buying and selling of sterling by the Reserve Bank at $18\frac{3}{16}d.$ and $17\frac{49}{64}d.$ respectively. The cost of transportation of gold per rupee is $\frac{1}{4}d.$ per rupee, so that the upper and lower specie points of the 18*d.* rupee are $18\frac{1}{4}$ or $18\frac{1}{16}d.$ and $17\frac{3}{4}$ or $17\frac{48}{64}d.$ If the Reserve Bank is always ready to buy sterling at $18\frac{3}{16}d.$, exchange cannot rise above the upper specie point, $18\frac{4}{16}d.$; if the Reserve Bank is always ready to sell sterling at a rate not more unfavourable than $17\frac{49}{64}d.$ exchange cannot fall below the lower specie point, $17\frac{48}{64}d.$

CHAPTER X

BANKING

The Indian money market consists of indigenous as well as foreign elements. The village money-lender, the private banker in towns and shroffs in the Presidency towns form the foundation of the Indian credit system. On this foundation there has been erected a superstructure of credit, a banking organisation, such as exists in a much more developed and complicated form in the West. Both the elements, Indian and foreign, perform useful functions, but the indigenous banker plays the more important part in providing the agriculturist and the craftsman with the credit which they need, and also in the financing of the internal trade of the country.

1. The Imperial Bank of India.

Before the constitution of the Reserve Bank, the Imperial Bank of India did duty as a kind of Central Bank. The Imperial Bank was founded in 1921 by amalgamating the three Presidency banks of Calcutta, Bombay and Madras. The Imperial Bank is not a State bank, but its connection with the Government of India was a close one.

The Imperial Bank kept the whole of Government balances on which it did not pay any interest. Before the foundation of the Imperial Bank Government used to keep a substantial portion of its balances in Reserve Treasuries at Calcutta, Bombay and Madras. This Independent Treasury System was held to be in the main responsible for the stringency of money in the busy season, but its abolition did not give much relief to the money market. By the terms of its Charter the Imperial Bank is allowed to draw, accept, discount, buy and sell bills of exchange and other negotiable instruments in India and Ceylon only. The Bank is also prevented from making any loan or advance for a longer period than six months and except on the security of two names.

The establishment of the Reserve Bank alters the position of the Imperial Bank and its relations with the Government.

An agreement has been concluded between the Reserve Bank and the Imperial Bank. By this agreement, the Imperial Bank is the sole agent of the Reserve Bank at all places in British India where there is a branch of the Imperial Bank which was in existence at the commencement of the Reserve Bank of India Act (1st April, 1935), and there is no branch of the Banking Department of the Reserve Bank. The Imperial Bank receives a commission from the Reserve Bank for performing at these places, on behalf of the Reserve Bank, the functions which it was performing on behalf of the Governor-General in Council before 1st April, 1935. Finally, for maintaining branches not less in number than those existing before 1st April 1935, the Imperial Bank was to receive from the Reserve Bank a payment of 9 lakhs per annum during the first five years of the agreement, 6 lakhs per annum during the next five years, and 4 lakhs per annum during the next five years.

2. The Exchange Banks.

The main business of the Exchange banks is to finance India's import and export trade. They viewed the proposal to amalgamate the three Presidency Banks into the Imperial Bank of India with a certain amount of misgiving, as they thought that the new Bank might attack their monopoly, *i.e.*, the exchange business. In a speech delivered in April, 1920, the Chairman of the Chartered Bank of India (Exchange Bank) said that the Exchange banks were not hostile to the proposed amalgamation, 'always provided that the present intention of not competing with the Exchange banks in their ordinary business of exchange is fully and honourably adhered to." The Exchange banks have preserved their monopoly—the Imperial Bank is not allowed to compete with them in their special business and the Indian Joint-Stock banks, with only a few exceptions, have no foreign branches, and do not enjoy the same facilities as the Exchange banks for undertaking exchange business.

The Reserve Bank is authorised to purchase, sell and discount bills of exchange (including treasury bills) drawn in the United Kingdom and maturing within 90 days from the date of purchase but ordinarily only through a scheduled bank.

The Exchange banks may be divided into two groups: banks doing a considerable portion of their business in India, and Banks which are merely agencies of large banking corporations doing business all over Asia. Their total number is 19. In addition to the exchange business they do ordinary banking business, and thus compete with the Imperial Bank and the Indian Joint-Stock banks. But they take very little part in the financing of the internal trade.

Our foreign trade is financed as follows. The Exchange banks in India collect on maturity the bills drawn on Indian importers for goods purchased by them. These bills are sent to the Exchange banks either direct by the foreign drawer or by a bank which has purchased the bill from the foreign drawer. The Exchange banks also supply knowledge to the foreign exporter about the financial position of the purchasing firms in India.

With the proceeds of the import bills received by them for collection and the deposits they obtain the Exchange banks purchase the exporters' bills offered to them. But the balance of trade in merchandise is generally in India's favour. The funds that the Exchange banks have in India are generally insufficient for purchasing the exporters' bills, and they have to supplement their resources in other ways. Till recently the Exchange banks did so by purchasing the Secretary of State's Council bills; at present they add to their funds by selling sterling to Government. They also import sovereigns, and gold and silver bullion.

3. Indigenous Bankers.

The village Mahajan, Mahajans in towns and shroffs in the Presidency towns, the Joint-Stock banks, and the Imperial Bank all take a share in the financing of the internal trade. The importance of the part played by the Mahajan in the moving of crops from the village to the local market called the *mandi*, and from local markets to large towns and the ports cannot be exaggerated. He finances (*a*) agricultural operations, which is financing industry and (*b*) trade, which is a commercial function. The village Mahajan, who is the centre of the whole system, as the Indian village is the centre of Indian economic life, is not only a money-lender, but a dealer in grain and other goods. He possesses his own capital, but has also business connections with bigger Mahajans in the larger towns, who deal with Joint-Stock banks.

Hundis are used in the internal trade of India. The *hundi* is an internal bill of exchange. A considerable portion of the business of Indian banks consists in making advances against *hundis*. The shroffs in the Presidency towns purchase *hundis* on their own account, and have recourse to banks for discounting *hundis* only when they have exhausted their resources. They purchase *hundis* from smaller shroffs, and these from other shroffs in the smaller towns or villages.

Even before 1921 the connection between the Presidency Banks and up-country trade was very close, and the opening of 100 new branches, within five years, which was one of the conditions imposed upon the Imperial Bank when it was constituted in 1921, was meant to render this connection closer still. By the rates which the Imperial Bank charged on the discount of *hundis*, and the extent to which it showed itself willing to buy *hundis*, it materially affected the supply of credit in the money market in and outside the Presidency towns.

The connection between the rates of discount charged by shroffs and the official *hundi* rate of the Imperial Bank was not always a close one. Sometimes in the busy season the shroff's rate was higher than the Bank rate; in the slack season, the shroff's rate was lower than the Bank rate. The undercutting of the Bank by the private banker is possible because he has considerable financial resources of his own, which are employed exclusively in financing the internal trade of the country. When the Imperial Bank found that it was getting very little business in *hundis*, and much of its cash was lying idle, it lowered its *hundi* rate. On the other hand, when it was very hard pressed for money, it refused to buy new *hundis*.

4. Joint-stock Banks.

The growth of Indian Joint-Stock banks has been rapid. In 1870 the number of reporting banks was 2, with capital and reserve of 11½ lakhs and deposits amounting to about 14 lakhs. In 1900 the reporting banks had capital and reserve of 1¼ crores and deposits amounting to 8 crores. Thirteen years later the number of banks increased to 18, capital and reserve to about 2⅓ crores and deposits to over 22½ crores. The progress of the Joint Stock banks in more recent years is shown by the following table :

Indian Joint-Stock Banks (with Capital and Reserve of Rs. 5 lakhs and over). Position on 31st December of each year

		1918	1927	1939
Reporting banks, No.	...	18	29	51
Paid-up capital. Crores	...	2·3	6·9	8·3
Reserve and rest ,,	...	1·3	4·2	5·3
Total ,,	...	3·6	11·1	13·6
Deposits ,,	...	22·6	60·8	100·7
Cash balances ,,	...	4·0	7·7	10·7

The percentage of cash to deposits used to be unduly low. Attention was drawn to it by J.M. Keynes before the Great War, and he predicted trouble. The crisis in banking which occurred in 1913 was very severe. Between 1913 and 1917 no less than 87 banks failed with a paid-up capital of 1¼ crores. The largest number of failures occurred in 1914 (42 banks with a paid-up capital of over 1 crore).

The crisis was due to lack of experience and mismanagement, and, partly, to the attempt to finance industries with short-term deposits.

On 31st of December 1939, the Imperial Bank, our biggest joint-stock bank, had a paid-up capital and reserve of Rs. 11¼ crores and deposits amounting to 88 crores.

On the same date 19 Exchange Banks had deposits in India and Burma amounting to 74 crores.

The following statement shows the Scheduled Banks' consolidated position in India and Burma in 1939-40 (annual average of Friday Figures) :

		Figures in Lakhs of Rs.	
(*a*) Demand liabilities	...	1,39,65	(701)
(*b*) Time liabilities	..	1,06,03	(405)
(*c*) Cash	...	7,08	(35)
(*d*) Balances with Reserve Bank		17,43	
(*e*) Excess of (*d*) over the Statutory minimum	...	833	
% of (*c* + *d*) to (*a* + *b*)	...	9·98	
(*f*) Advances ...	...	1,25,89	(442)
(*g*) Bills discounted	...	5,25	(28)
% of (*f* + *g*) to (*a* + *b*)	...	53·38	

(Burma figures are shown in brackets.)

The balances which the Scheduled banks are required to maintain with the Reserve Bank are known as the 'statutory minimum'. The reader will presently learn what is meant by 'Scheduled banks'.

5. Are banking facilities adequate ?

At the end of 1940 the number of offices and branches of banks in India and Burma was as follows :

		No. of Offices
Reserve Bank of India	...	8
Imperial Bank of India	...	390
Exchange Banks	...	101
Other Scheduled Banks	...	857
Non-Scheduled Banks having capital and reserves of Rs. 50,000 and over	...	718
Total		2,074

This was the position at the end of 1940. At the end of June, 1943, the offices and branches etc., of Scheduled banks had risen to 1,600. Information about other banks is not available, but very probably the total number of offices and branches of all banks at the present time is well under 3,000. This may be compared with 15,000 banking corporations in the United States in 1938.

In 1928, when there were fewer branches, pay offices etc. of banks in India, the foreign experts, who were appointed by the Goverment of India to review the recommendations of the Central Banking Enquiry Committee, wrote :

"The question whether the banking facilities of India are sufficiently large for the economic needs of the country has in the Enquiry [the reference is to their Indian colleagues] been almost unanimously answered in the negative by the non-bankers. The criticism cannot be fully upheld from an expert point of view."

The expert point of view was that the country was not 'abounding with untapped banking possibilities', and that it was even doubtful whether or not some up-country places were 'rather over-banked'.

Speaking in 1937, the late Sir J. B. Taylor, Governor of the Reserve Bank, thus referred to the increase in the total

---

* *Report*, p 626.

number of branches, pay offices etc of the Scheduled banks during 1936-37, from 723 to 828 "Though this increase is welcome, it is obviously still very meagre when the vast potentialities are considered and it is to be hoped that, with the spread of banking education and the consequent increasing availability of trained Indian bankers, the process may develop on a largely increasing scale, because it is in the expansion of branches by the scheduled banks that one of the main solution lies of building up rural credit and developing the potentialities of the country ' (*Report of the Second Annual General Meeting of Share holders of the Reserve Bank of India, 8th February 1927, p 11.*)

6 A Central Bank for India.

A Bill to establish a central bank in India, called the Reserve Bank, was introduced in the Legislative Assembly in January, 1927 It was described by Sir Basil Blackett as " one of the greatest measures of financial liberalism ever brought forward by the Government of India."

The establishment of a Central Bank in India was recommended by the Currency Commission of 1925. They pointed out the inherent weakness of a system in which the control of currency and credit was in the hands of two distinct authorities the credit situation being controlled by the Imperial Bank of India and the currency situation by the Government The currency and banking reserves of the country were also separately managed. The unification of the control of currency and credit could only be brought about by the creation of a central bank enjoying the sole right of note issue, and independent of the State The Currency Commission recommended that the central bank should be a shareholders bank, with a fully paid-up capital of Rs 5 crores In making their recommendations regarding the management of the central bank they kept in view the Resolutions passed both by the International Financial Conference of Brussels (1920) and that of Genoa (1922) to the effect that ' Banks, and especially Banks of issue, should be free from political pressure, and should be conducted solely on lines of prudent finance

The Currency Commission distinctly laid it down that no person should be appointed President or Vice-President of a Local Board, or should be recommended as a member of the

Central Board, who was a member of the Governor General's Council, the Council of State, the Legislative Assembly, or of any of the Provincial Governments or Legislative Councils.

Differences arose in the Legislative Assembly on two points. In the first place the Assembly, by a majority, decided that the Central bank should be a State Bank, secondly the Assembly insisted on the inclusion of representatives of Central and Provincial Legislatures in the Board of Directors

Indian opinion preferred a State bank, that is a bank with capital subscribed by the Government, in place of a bank with private share-capital The advantages of a share holders' bank were recognised, the board of management is elected by the shareholders, and this provides a ready-made constituency for the selection of a representative directorate further, members of the board have themselves contributed to the capital of the bank. and they are accountable to the share-holders for money which they have contributed Such a bank may also be completely independent of the State. But the fear of non officials was that in the special circumstances of India a central Bank directed by a body responsible only to a number of private share holders, would tend to be controlled by vested interests, and that its utility to the public might even be endangered by a conflict of interests within the management of the Bank between Indian and external capital.

As the differences between the official and non-official points of view proved irreconcilable, Government announced on 8th September, 1927, that they did not intend to proceed with the Bill. Later, on February 6 1928, discussion on the Bill was resumed, but the rejection by the Assembly of Clause VIII, relating to the constitution of the Board of Directors, ended the discussion

A new Act constituting the Reserve Bank of India received the assent of the Governor General on 6th March, 1934. The object is "to regulate the issue of bank notes and the keeping of reserves with a view to securing monetary stability in British India and generally to operate the currency and credit system of the country to its advantage." The Act leaves the question of the monetary standard best suited to India to be settled later, it only makes "temporary provision on the basis of the existing monetary system"

7. The Reserve Bank of India.

(*a*) **Constitution.** The Reserve Bank is a share-holders' bank. The share capital of the Bank is 5 crores, divided into fully paid-up shares of Rs. 100 each. The nominal value of the shares originally assigned to the various Registers is as follows : Bombay 140 lakhs, Calcutta 145 lakhs, Delhi 115 lakhs, Madras 70 lakhs. and Rangoon 80 lakhs. British subjects ordinarily resident in India but domiciled in the United Kingdom or in the British Dominions, and companies incorporated in the United Kingdom or the British Dominions having a branch in British India, may become share-holders of the Reserve Bank, provided the Dominion concerned does not discriminate in any way against Indians.

The Central Board consists of a Governor and two Deputy Governors appointed by the Governor General in Council, 4 Directors nominated by the Governor General in Council, 8 Directors elected on behalf of the share holders on the various Registers, and one Government official nominated by the Governor-General in Council. In each of the five areas there is a Local Board consisting of 5 members elected from amongst themselves by the share-holders on the register for that area and 3 members nominated by the Central Board from amongst the same share-holders.[*]

The Business which the Bank may Transact. The Bank may purchase, sell and rediscount bills of exchange and promissory notes (*a*) drawn and payable in India, maturing within 90 days and arising out of *bona fide* commercial or trade transactions, (*b*) drawn and payable in India, maturing within 9 months and drawn or issued for the purpose of financing seasonal agricultural operations or the marketing of crops, and (*c*) drawn and payable in India, issued or drawn for the purpose of holding or trading in securities of the Government of India, or a Local Government, or specified securities of States. In each case one of the signatures on the bill must be that of a scheduled bank.

---

[*] **Excepting the Governor, Deputy Governor or the Director nominated by the Governor-General in Council, no person may be a Director or a member of a Local Board who is a salaried Government official or a salaried official of a State in India, is an officer or employee of any bank, or is a Director of any bank other than a bank which is a society registered under the Co-operative Societies Act of 1912.**

The Bank may make to States in India, local authorities and provincial co-operative banks loans and advances against specified securities, which include promissory notes of any scheduled bank, or a provincial co operative bank, supported by documents of title to goods which have been pledged to any such bank as security for a cash credit or overdraft granted for *bona fide* commercial or trade transactions, or the marketing of crops.

The Bank may purchase and sell Government securities of the United Kingdom maturing within 10 years from the date of purchase, and the securities of the Government of India or of a Local Government of any maturity. The amount of such securities-held at any time in the Banking Department will be governed by definite rules.

The Bank acts as agent for the Secretary of State in Council, the Governor-General in Council, or any Local Government or Local authority or State in India, in the transaction of financial business, which has been defined. In addition, it receives money from them on deposit (without interest) and also from banks and any other persons.

(*b*) **Business which the Bank may not Transact.** The Bank may not (1) engage in trade or otherwise have a direct interest in any commercial, industrial or other undertaking, (2) purchase its own shares or the shares of any other bank or company or grant loans upon the security of any such shares, (3) advance money on mortgage of immovable property, (4) make unsecured loans or advances, (5) draw or accept bills payable otherwise than on demand, and (6) allow interest on deposits or current accounts.

(*c*) **Central Banking Functions.** The Government of India and Local Governments shall entrust the Bank with all their money, remittance, exchange and banking transactions in India and, in particular, shall deposit, free of interest all their cash balances with the Bank.

The bank has been entrusted with the management of the public debt and with the issue of new loans.

The bank has taken over the note-issue from the Government of India and has the sole right to issue notes.

As in the case of the Bank of England, the Issue Department of the Bank is separate and wholly distinct from the

Banking Department. The notes are a liability of the Issue Department alone. The notes issued (lowest denomination Rs. 5) are legal tender.

Of the total amount of assets of the Issue Department, 40 per cent shall consist of gold coin, gold bullion or sterling securities. The remainder of the assets (60 per cent) shall be held in rupee coin, Government of India rupee securities of any maturity, and such bills of exchange and promissory notes payable in British India as are eligible for purchase by the Bank. But the amount held in Government of India rupee securities shall not at any time exceed one-fourth of the total amount of the assets, or 50 crores of rupees, whichever amount is greater, or, with the previous sanction of the Governor-General, such amount plus a sum of ten crores of rupees.

Of the assets in the form of gold or gold coin, 85 per cent shall be held in British India.

The reserve requirements may be suspended (for periods not exceeding 30 days in the first instance, which may be extended by 15 days) on the payment of a tax by the Bank upon the amount by which the holding of gold coin, gold bullion and sterling securities is reduced below the prescribed minimum. The tax shall be payable at the bank rate for the time being in force with an addition of one per cent per annum when such holding exceeds 32½ per cent of the total amount of the assets, and of a further 1½ per cent per annum in respect of every further decrease of 2½ per cent or part of such decrease.

(*d*) **Relations with other Banks.** The expression "Scheduled banks" has been used above. These are banks mentioned in a schedule attached to the Reserve Bank Act. Their number is now 70. The law requires that every scheduled bank shall maintain with the Reserve Bank a balance the amount of which shall not, at the close of business on any day, be less than 5 per cent of the demand liabilities and 2 per cent of the time liabilities of such bank in India. (The liabilities in this connection shall not include the paid-up capital or the reserve, or any credit balance in the profit and loss account of the bank, or the amount of any loan taken from the Reserve Bank). Weekly returns shall be submitted by every scheduled bank to the Governor-General in Council and the Reserve Bank showing, among other things, its demand and time liabilities, its balance at the Reserve Bank, and the amount of advances made and of bills discounted by it. The Reserve Bank will also submit a weekly return of the Issue and of the Banking Department to the Governor-General in Council.

It is thought that the percentages for minimum reserve balances are somewhat high for India, but they are lower than the percentages recommended by the Currency Commission—10 and 3 per cent respectively for demand and time liabilities.

To make the control of credit by the Reserve Bank effective it was essential that the requirements regarding the maintenance of the minimum reserve balance with the Reserve Bank should apply to as large a number of banks as possible, and in this respect Schedule 1 is satisfactory.

As a compensation for the obligation imposed upon scheduled banks to maintain compulsory deposits free of interest in the Reserve Bank, the facilities which the Reserve Bank provides in the way of re-discount of bills of exchange and promissory notes will be restricted to the scheduled banks.

The Banks will ordinarily only re-discount bills of exchange and promissory notes, but the power of direct discount, or open market operations, has not been withheld from it. However, to prevent indiscriminate competition with the commercial banks, it has been provided that this power shall be exercised only when, in the opinion of the Board, such action is necessary or expedient in the interests of Indian trade or commerce.

8. Question of Elasticity.

There was a provision in the old Paper Currency Act for the issue of emergency currency against internal bills of exchange or *hundis*. This device imparted a certain measure of elasticity to the currency system. Its working however, was not unattended with difficulties, and in 1924, in spite of the loan of Rs. 22 crores to the Imperial Bank under the provision mentioned above, the Government had to assist the market by expanding the note-issue to the extent of a further Rs. 12 crores against British Treasury bills, earmarked to the Paper Currency Reserve in London. The chief difficulty in connection with the issue of emergency currency against commercial bills is that the internal trade of India is, for the most part, financed by a system of cash credits, and the Imperial Bank has found it difficult to secure an adequate volume of bills as cover against the seasonal increase, with the result that the Government were compelled to meet the demand for additional currency by regulating their holding of sterling securities in the Paper Currency Reserve. On more than one occasion the Imperial Bank had to put pressure on its clients to convert cash credits into *hundis* in order that it might have self-liquidating *hundis* to put up as a cover against the loan from the Paper Currency Reserve. These *hundis* or bills, although they represented a real demand for finance for trade, did not represent any definite goods or commodities, being in fact manufactured bills substituted for cash credits.

The provisions of the new Reserve Bank Act, relating to the issue of emergency currency, have been so framed as to meet these difficulties.

In the first place, the Bank is authorised to transact the purchase, sale and re-discount of internal bills of exchange and promissory notes drawn or issued for the purpose of financing seasonal agricultural operations or the marketing of crops. These bills or promissory notes (as we have seen) must bear two or more good signatures, one of which shall be that of a scheduled bank or a provincial co-operative bank, and they must mature within nine months from the date of purchase or re-discount.

In the second place, in view of the prevalent system of financing the internal trade by cash credits and the difficulty of securing an adequate volume of *hundis* for the purpose, the Bank would be authorised to make loans and advances repayable on demand, or within 90 days, against the security of promissory notes of any scheduled bank or a provincial co operative bank on certain conditions.

Finally, elasticity is imparted to the whole system by the provisions of the Act relating to the suspension of the reserve requirements.

9. Scarcity of Bills.

Indian Joint-Stock Banks hold a comparatively small amount of bills. As compared with their holding of bills their investments (mostly in Government securities) are large. The Central Banking Enquiry Committee found that six Indian Joint-Stock Banks in 1928 held bills of 1,23 lakhs, while their 'Investment' amounted to 20 crores. The explanation partly lies in the attractive yield of Government securities. Further, Government securities are more helpful in maintaining a liquid position.

To facilitate the use of bills the Central Banking Enquiry Committee, suggested :

(1) a lowering of the stamp duty on bills ;

(2) the stocking for sale by Post Offices of bill forms printed in English and the vernacular ;

(3) validating of the noting of dishonour and protest by recognized associations of banks, shroffs or merchants, and

(4) standardization of customs governing the *hundis.**

Of special interest is the Agricultural Credit Department of the Reserve Bank. The functions of this Department are (1) to maintain an expert staff to study all questions of agricultural credit, and (2) to co-ordinate the operations of the Reserve Bank in connection with agricultural credit and its relations with provincial co-operative banks or organisations engaged in the business of agricultural credit.

10. The Reserve Bank and Exchange.

From the 1st of April, 1935 the Reserve Bank took over the duty of supplying the Secretary of State with sterling for his London requirements.

There was a sharp fall in exchange in the middle of 1938, and on June 6 Telegraphic Transfers were quoted at Calcutta at 17¾*d*.

The fall in exchange caused speculation in regard to the action to be taken by the Reserve Bank to maintain the 18*d*. sterling ratio.

Both the 'Economist' and the 'Statist' commented on the weakening of the rupee. The 'Economist' mentioned 'the adverse trade balance' as the foremost reason for the weakness of the rupee. The trade balance was not actually adverse but the amount of the favourable trade balance had decreased. This is a serious matter, considering India's debtor position. It is with surplus exports that we meet our obligations abroad.

---

* ***Section 592-3 of the Report.***

The 'Economist' said : "Before long the Reserve Bank may be forced to carry out its statutory duty of holding the rupee." Is it the statutory duty of the Reserve Bank to hold the rupee ? An inspired statement, which appeared in the *C. & M. Gazette* of May 1, sought to correct the 'mistaken impression' that it was the duty of the Reserve Bank to maintain the 18*d*. rate !

The Reserve Bank is under obligation both to buy and sell sterling within the specie points. Sec. 40 of the Reserve Bank Act is quoted below :

> **"The Bank shall sell to any person, who makes a demand in that behalf, at its office in Bombay, Calcutta, Delhi, Madras or Rangoon, and pays the purchase price in legal tender currency, sterling for immediate delivery in London, at a rate not below one shilling and five pence and forty-nine sixty-fourths of a penny for a rupee,**

"Provided that no person shall be entitled to demand to buy an amount of sterling less than ten thousand pounds."

Section 41 of the Reserve Bank Act is concerned with the purchase of sterling by the Reserve Bank, at a rate not higher than one shilling and sixpence and three-sixteenths of a penny for a rupee."

Thus section 40 definitely makes the Bank responsible for preventing exchange from falling below the lower specie point It is a statutory obligation imposed upon the Bank, and that is what 'holding the rupee' means. And that is how a central bank maintains the legal rate of exchange. The day-to-day exchange value of a currency is determined by supply and demand for foreign remittance, but if the law of supply and demand tends to depress exchange below the lower specie point, the Central Bank must intervene. If, when exchange tended to fall below 1*s*. 5-49/64*d*, the Reserve Bank declined to sell Reserve bills at 1*s*. 5-49/64*d*. per rupee, it would fail to carry out its statutory obligation.

11. Applicability of the Theory of Central Banking to India.

To all intents and purposes India now possesses a central banking structure like that in other countries. Differences, for example, between the Indian and the American system are of a minor character. The United States has 12 Federal

Reserve Banks, while we have only one Central bank, but the 12 Federal Reserve banks of the United States function as a single organism and their operations are directed by a single Board. For Reserve requirements American banks are divided into three groups, Central Reserve City banks, Reserve City banks and Country banks. The reserve requirements in U. S. A are higher than in India, 5% of time deposits for all classes of banks, and 12%, 17½% and 22¾% of demand deposits in the case of Country Banks, Reserve City banks and Central Reserve City banks respectively. Corresponding to our scheduled banks, America has 'member banks'. About 43 per cent of the commercial banks belonged to the federal reserve system in 1938. The member banks own the federal reserve banks. The Federal Reserve Banks enjoy the same power of open market operations as the Reserve Bank of India. As in India, the minimum gold reserve against federal reserve notes (which have replaced National bank notes) is 40%. As in India, this requirement may be suspended on the payment of a graduated tax to the Government under certain conditions.

The relations of the Reserve bank of India with scheduled banks are essentially the same as those in the Federal Reserve system. The Reserve Bank grants temporary accommodation only. It may refuse to rediscount the paper of any particular scheduled bank without assigning a reason. In granting accommodation it takes into consideration not only the nature of the security offered but also the general character of the investments of the applying bank and the manner in which its business is being conducted. The Reserve bank also endeavours to ensure that the credit granted by it is not misused in any way. Similarly, in U. S. A. the Federal Reserve Banks now seek to control not merely the quantity of credit which they grant to member banks, but also its quality. After the banking crisis of 1929 the control of the federal reserve system over the member banks was tightened.

We have, however, no insurance of deposits as in the United States. Compulsory insurance of deposits to a maximum sum of, say, Rs. 5,000 of any one depositor in any one bank would protect all but the biggest depositors and tend to increase the confidence of the public in joint-stock banks. The maximum limit is 5,000 dollars in U. S. A.

Apart from the insurance of deposits we possess a central banking system like that of the United States. But central banking in India has not the same significance as in America or other countries.

12 Credit control.

The chief function of a central bank is to control credit, and through credit control, prices. The terms of credit determine the rhythm of business life. They are not constant, but rise and fall about an 'equilibrium position.' When the terms of credit are lower than the equilibrium level, prices rise and profits are made by entrepreneurs, or there is a boom. This continues until the terms of credit and their equilibrium level are brought closer together. If the terms of credit are higher than the equilibrium level, prices fall and entrepreneurs suffer losses, or there is a slump.

When investment is equal to saving, the terms of credit are at the equilibrium position. The equilibrium between investment and saving is thus "the only criterion which would preserve the stability of prices." (Keynes)

The aim of a central bank is to so regulate the flow of investment, or the creation of new capital, that it is equal to saving. It endeavours to do so by influencing credit creation by joint stock banks. When the central bank thinks that these banks are not following its lead, it resorts to 'open market operations' to compel them to give effect to its policy.

This is the essence of the theory behind central banking. This theory assumes that there is an intimate connection between the level of prices and credit, and that prices (and. thereby, investment, wages and profits) can be regulated through the manipulation of the Bank rate.

Credit is an important price-determining factor in Western countries. In India, on the other hand, cash (rupees and notes) determine prices, not credit created by joint-stock banks. Our Reserve Bank, set up in imitation of other countries, apart from relieving Government of the responsibility for managing the currency system, serves mainly an ornamental purpose.

13. Correlation between Credit and Prices.

The relation between credit and prices can be expressed quantitatively with the help of a simple statistical device—the coefficient of correlation. A coefficient of +1 indicates perfect correlation, one of zero signifies no correlation, and a coefficient of −1 means that the correlation is perfect but inverse.

The statement given below supplies the data for calculating the coefficient of correlation between deposits (credit) and wholesale prices in the United States and India for the period 1930-38 :

Year.	UNITED STATES.		INDIA.	
	Demand Liabilities in 1,000 million dollars.	Wholesale prices 1929 = 100.	Total commercial bank deposits Million Rs.	Wholesale prices 1914 = 100.
1930	25·1	90·7	2,124	116
1931	21·3	76·6	1,975	96
1932	16·4	68·0	2,177	91
1933	15·3	69·2	2,213	97
1934	17·6	78·6	2,276	89
1935	21·6	83·9	2,450	91
1936	25·4	84·8	2,575	91
1937	26·9	90·6	2,629	102
1938	25·8	82 5	2,555	95

In the United States the movement of wholesale prices on the whole closely followed the movement of credit, and the coefficient of correlation is + 0 87.

For India we have no figures of demand deposits for the earlier years. The coefficient of correlation between total commercial bank deposits and wholesale prices is − 0 13, signifying that there is a total absence of direct connection between the expansion and contraction of credit and wholesale prices. The co-efficient of correlation between prices and currency (rupees and active circulation of notes), on the other hand, is + 0·65.

The coefficients of correlation between commercial bank deposits and wholesale prices for four other countries are given below :—

United Kingdom	1930-38	r = + ·79
Germany	1930-36	r = + 89
Netherlands	1930-37	r = + ·92
Japan	1930-38	r = + ·98

The contrast between the coefficients of correlation for other countries and that for India is striking.

The commercial banks occupy an important place in our money market. They maintain relations with dealers on the stock exchange and also industrialists. But there is a large field of productive activity which is not represented by the classes mentioned, and with which the commercial banks have no direct concern. We refer to the financing of agriculture and agricultural operations generally.

The functions of the Reserve Bank have been set forth in an admirable hand-book issued by the Reserve Bank. In regard to credit control, the powers of the Reserve Bank have not yet been subjected to any severe test. The scheduled banks are not "as a rule large borrowers from the Bank." The other methods of control mentioned are changes in the amount of treasury bills offered, in the amount of sterling purchased and in the amount of money in circulation, but, it is stated, "these methods are comparatively less effective and of limited applicability. Thus, although the Reserve Bank has been entrusted with most of the powers generally given to a central bank, its actual control is limited by the peculiar character of the Indian monetary and banking system."[*]

The passage refers to the relation of the Reserve Bank with the scheduled banks. But even the strictest control over the scheduled banks would not give the Reserve Bank control over prices, so long as a direct and intimate connection is not established between joint-stock banks and indigenous bankers financing agriculture.

14. The Reserve Bank and Indigenous bankers.

The Central Banking Enquiry Committee, complained of the absence of a central co-ordinating agency in the Indian banking system. The Indian money market consisted of various elements (the Imperial Bank, the Exchange banks, the joint-stock banks, co-operative banks, shroff's in bigger towns and money-lenders in the villages) which were independent of each other. "With the banking system so loosely organised, we cannot expect the Bank rate in India to have the same significance and the same influence on the money market as in other highly developed banking systems." Since then a central co-ordinating agency, in the shape of the Reserve Bank has been created, but this agency has little

---

[†] *'Functions and Working of the Reserve Bank of India'* **(Bombay), p. 50.**

connection with indigenous banking. At present it seeks to control (in a very limited sense, as we have seen), the activities of scheduled banks only.

The problem of linking indigenous bankers with the Reserve Bank has received attention, for it is realised that control of joint-stock banks alone does not create a co-ordinated banking system functioning as a single organism.

"Unfortunately, these joint-stock banks still only cover a small portion of the field. In the smaller country towns and in the villages they are either still non-existent or play a very minor role in comparison with the private indigenous banker, and it is therefore obvious that if India's banking system is to be complete, provision must be made for the inclusion of the latter."*

The difficulties in the way are two:—(*a*) Indigenous bankers take deposits to a very small extent, and depend to a very much greater extent for their capital either on their own resources, or on loans from commercial banks. For this reason alone "they cannot be considered eligible for central banking facilities". (*b*) Secondly, indigenous bankers do not confine their activities to banking proper. They are unwilling to shed their business other than banking, and even to segregate banking and non-banking business and keep separate accounts.

The following more important conditions were stipulated for indigenous bankers who wished to be linked directly with the Reserve Bank :—

1. They must confine their business to banking proper.
2 They must maintain proper accounts and have them audited by registered accountants.
3. They must file with the Reserve Bank the periodical statements prescribed for scheduled banks.
4. The Reserve Bank will have the right of regulating the business of the bankers on banking lines, when necessary.

The present position is a deadlock. It is doubtful if any indigenous banker could be persuaded to take advantage of the Reserve Bank's offer on the conditions stated. "It is better to forego the facility than to submit to such unreasonable demands"†—this, at present, sums up their reaction.

---

* This is stated in the "Draft scheme for the linking of indigenous bankers with the Reserve Bank of India" prepared by the latter.

† Letter to the Reserve Bank from Seth Fatichand Gokaldas Bankers, Madura (see the Statutory Report, issued by the Agricultural Credit Department of the Reserve Bank, in 1937. p. 68).

APPENDIX D (CHAPTER X)

Correlation Coefficient

The reader should learn to find Karl Pearson's co-efficient of co-relation. We shall have to use it again.

When there are two variables, x and y

$$r=\frac{\sum(dx.dy)}{n\,\sigma x.\sigma y}, \text{ where}$$

r=Karl Pearson's co-efficient of correlation,
$\sum$=symbol of summation.
dx=deviations of x from the arithmetic average
dy=deviations of y from the arithmetic average
n=number of terms
σx=standard deviation of x
σy=standard deviation of y.

σ(sigma) or standard deviation is a measure of dispersion of the items of a given series around the mean, or the arithmetic average. The following formula is used for finding the standard deviation :

$$\sigma=\sqrt{\frac{\sum d^2}{n}}.$$

The calculations made for finding the co-efficient of correlation between deposits (x) and wholesale prices (y) in India (1930-38) are shown in the following table :

Karl Pearson's Co-efficient of Correlation between Commercial Bank Deposits and Wholesale Prices in India, 1930-38.

1	2	3	4	5	6	7	8
Year	Deposits in Million Rs. (x)	Prices (y)	dx	dy	$dx.dy$	dx^2	dy^2
1930	2124	116	−206	+20·7	−4264·2	42436	428·49
1931	1975	96	−355	+ 0·7	− 248·5	126025	·49
1932	2177	91	−153	− 4·3	+ 657·9	23409	18·49
1933	2213	87	−117	− 8·3	+ 971·1	13689	68·89
1934	2276	89	− 54	− 6·3	+ 340·2	2916	39·69
1935	2450	91	+120	− 4·3	− 516·0	14400	18·49
1936	2575	91	+245	− 4·3	−1053·5	60025	18·49
1937	2629	102	+299	+ 6·7	+2003·3	89401	44·89
1938	2555	95	+225	− 0·3	− 67·5	50625	0·09
Total	20974	858			−6149·7 +3972·5	422926	638·01
Average	2330	95·3					
				$\sum(dx.dy)$	−2177·2		

The mean of x (deposits) $= 2330$

The mean of y (prices) $= 95\cdot8$.

Cols. 4 and 5 show the deviations of x and y respectively. For example, x for $1930 = 2124$, which is less than the average value of deposits by 206 million Rs. Thus dx for $1930 = -206$, dy for 1930 is $+20\cdot7$, and so on.

Col. 6 shows $dx.dy$; we multiply the figures. in cols. 4 and 5 with their signs. $\sum dx.dy = -2177\cdot2$.

$$\sum(dx^2) = 422926$$

$$\sum(dy^2) = 638\cdot01.$$

$$\sigma x = \sqrt{\frac{422926}{9}} = \sqrt{46991\cdot78} = 216\cdot78$$

$$\sigma y = \sqrt{\frac{638\cdot01}{9}} = \sqrt{70\cdot89} = 8\cdot42$$

$$r = \frac{\sum(dx.dy)}{n\sigma x.\sigma y} = \frac{-2177\cdot2}{9 \times 8\cdot42 \times 216\cdot78} = \frac{-2177\cdot2}{16427\cdot6} = -\cdot18.$$

For exercise the reader should find r for the United States and the other four countries.

Wholesale Prices. Index Numbers, 1929-100

		Germany.	U. K.	Netherlands.	Japan.
1930	...	90·8	87·5	89·9	82·4
1931	...	80·8	76·8	76 5	69·6
1932	.	70·3	74·9	64·8	73·3
1933	...	68·0	75·0	63·1	81·6
1934	...	71·7	77·1	63·2	80·8
1935	...	74·2	77·9	61·7	84·4
1936	..	75·9	82·7	64·0	89 0
1937	...	...	95·2	76·4	108·4
1938	...	...	88·8	. .	114·3

Source : Statistical Year Book of the League of Nations, 1938-39.

*Deposits**

		Germany RM. 1,000 million	U. K. £1,000 million.	Netherlands, million golden.	Japan 1,000 million yen.
1930	...	19·79	2·31	1473	2·91
1931	...	14·78	2·14	1242	2·62
1932	...	14·06	2·41	1112	2·70
1933	...	14·04	2·38	996	2·90
1934	...	15·03	2·41	944	8·05
1935	...	15·55	2·54	776	3·09
1936	...	16·27	2·71	964	8·43
1937	...	...	2·74	1126	4·21
1938	...	...	2·65	...	4·89

*(*Source* : Statistical Year Book of the League of Nations, 1938-39).

Germany : Deposits A, current and deposits accounts, and due to domestic banks.

U. K.—Total Deposits.

Netherlands : Total Deposits, excluding foreign correspondents.

Japan : Ordinary and special current accounts.

CHAPTER XI.

THE FINANCING OF INDUSTRY

The foresight of the Government of India in appointing foreign experts to act as advisers to the Central Banking Enquiry Committee of 1928 (which had a predominantly Indian personnel), with the right to submit a separate report of their own, was fully justified. The Central Banking Enquiry Committee made a number of highly improper recommendations relating to the financing of foreign trade and industry, which the Government of India could never approve of, much less give effect to.

We have seen that the financing of our foreign trade is a monopoly of foreign Exchange banks. The Central Banking Enquiry Committee recommended the establishment of an Indian Exchange Bank with a capital of 3 crores.[*] The work of Government remittance was to be entrusted to a department of this bank under the control of the Reserve Bank.

The foreign experts condemned this proposal in their separate report as not only unfair and unjust but unsound : "The banking situation of the country does not require the creation of a new Exchange bank."[†] The transfer of Government remittance work to an Indian Exchange bank "would shake international confidence in the financial policy and wisdom of the Indian Government."

Naturally Government of India cannot be expected to take any action which might entail such serious consequences.

1. The Managing Agency System.

This system is of considerable importance in India for financing industries. Bombay owes much of its industrial development to it. In Bengal the system prevails in jute, cotton, coal and tea industries. In Ahmedabad the system is described as " an unqualified success "[‡] In Bihar and Orissa the Managing Agents provide capital for coal-mining, iron and steel, electrical enterprises, lime factories, mica mines and sugar factories.

---

[*] ***Report***, **p. 849.** [†] ***Report***, **p. 618.**

[‡] ***Report of the Central Banking Enquiry Committee***, **p. 286.**

The system as it prevails in different provinces is not exactly the same. In Bombay the Managing Agents raise capital from their friends and others, attract private deposits and take loans and cash credits from banks. The Central Banking Enquiry Committee, while not approving of the system, admitted that Managing Agents "have rendered yeomen's service to industries."* Loans from banks are obtained on the guarantee of the Managing Agents, but the guarantee is not required when advances are made against Government and other Trustee securities.

In Calcutta the Managing Agents are generally the founders of the concerns they manage. They arrange for both block and working capital—they find the money themselves, or raise share-capital, or make arrangements with banks.

In Ahmedabad, when a cotton mill is founded, a small amount of capital (about 25 per cent) is raised by share-capital and the balance is found by deposits and funds supplied by the Managing Agents. The deposits are received by mills generally for a year. They are made by individuals and also mill companies. Ahmedebad mills receive practically no assistance from banks.

The Central Banking Enquiry Committee drew attention to the "many serious drawbacks" of the system . (1) Some Managing Agents trade and speculate, besides managing their concerns. When speculation goes wrong, their financial weakness reacts on their concerns. Banks withdraw loans and cash credits. A concern may be intrinsically sound, but may have to suffer for the sins of the Managing Agents. (2) A few cases were brought to the notice of the Committee in which the Managing Agents turned their loans to the mills into debentures, with the result that the mills passed into their hands, and the share-holders lost all their capital. (3) The system works satisfactorily when the industries are prosperous ; when bad times come and the Managing Agents have to find more money, they are in many cases unable to do so.

The Committee suggested that industrial enterprise in India should be made less dependent on the Managing Agency

---

* *Report of the Central Banking Enquiry Committee*, p. 211.

[The reference is to the banking crisis of the year 1927] A temporary stoppage of payment by practically all banks, and the forcible interruption to which the whole economic life of the country has been subjected at various junctures, is a grave danger signal."[*]

And what happened in Germany in 1931 ? The entire banking system collapsed and it was only State aid and State control that set economic Germany on her feet again.

The Central Banking Enquiry Committee gave an accurate description of the methods of industrial finance in Germany. The foreign experts considered it necessary to destroy some illusions about the German banking system cherished by their Indian colleagues. The latter had been led to recommend a pattern which did not exist[†]. From the account given by the foreign experts it does not appear that there is the closest association of bankers with industry in Germany. "Incidentally", bankers in Germany get to know their customers better. They develop 'a sympathetic attitude' for the needs of industry, which is the real element in banking policy. Even in India the 'sympathetic attitude' may be taken for granted.

We get no help from the foreign experts in understanding methods of industrial finance in Europe or Japan. About Japan they knew nothing, their information about the Industrial Bank of Japan being derived from "an important Japanese gentleman in India ", whose knowledge of the subject was admittedly not profound.

The part played by special types of banks in initiating and developing industries is important. We may study industrial finance in three countries, Japan, Germany and France.

4. State aid in Japan.

The foreign experts associated with the Central Banking Enquiry Committee included an Hollander, Dr. Trip, a former President to the Bank of Java. If Dr. Trip had remembered a report, in the Dutch language, entitled, "The development of large-scale industry in Japan ', prepared at the instance of the Dutch Government, he might have been 'very reluctant ' to join in the condemnation of all-round state-aid in economic life, to which Japan owes her industrial advance.

The modernisation of Japan began with the Meiji Restoration of 1868. When feudalism voluntarily made place for capitalism, the question arose whether Government was merely te assist private enterprise or to start undertakings itself to serve as a model and an incentive to the people. Tha latter course was adopted, and the State erected shipbuilding yards, and spinning and sugar factories. built railways, and developed the mining resources of the country. Later, some of the State enterprises were handed over to private enterprise, the State retaining in its own hands, post, railways and the manufacture of armaments and war-ships, salt and tobacco also became State monoplies.

---

[*] *Report of the Central Banking Enquiry Committee*, p. 638.

[†] *Ibid*. pp. 633-34

"Capitalism in Japan", says Prof. Hijikata, "has not grown from bottom upwards, out of capitalistic enterprise of the people ; rather, it has been forced from top downwards".[1]

Similarly Prof. Araki says :

"The growth of industrialism in Japan is proceeding side by side with the expansion of the whole credit system. In contrast to most industrial countries, the credit system, however, is less the consequence of the growth of trade and production ; rather, at the time of Reforms of the Meiji Restoration, it was financial interests which stimulated the growth of trade and industry." [2]

The industrialisation of Japan began late, and to enable Japanese industry to compete on favourable terms with foreign manufacturers, it was necessary to give it all conceivable assistance (*alle denkbare unterstuetzung*).[3] The benking system, as we shall see presently, benefited from Government policy in a large measure,

Almost every page of Heer Van Kol's report (Part I) bears evidence of the leading part taken by the State in bringing about industrial development. Almost every undertaking, he noted, concerned with agriculture, fishing, mining, trade and shipping, enjoyed Government aid, and he quotes with approval an earlier French writer :

"The great strides that the Japanese industry has taken is due to intelligent State protection, which has not hesitated to make any heavy sacrifice to insure this development".[4]

---

[1] *Weltwirtschaftliches Archiv* (Kiel). Number for July 1987, pp. 209-10.

[2] *Ibid*, p 185. [3] *Ibid*, p. 185.

[4] *De Ontwikkeling der Groot Industrie in Japan*. Report prepared by Heer van Kol at the instance of the Dutch Minister for Colonies. The Hague, 1916, Part I, p. 60.

In the beginning industry was official ridden and the Japanese caste system also hindred progress. But gradually these difficulties were overcome. In the beginning more attention was paid to securing the home market for Japanese producers, than to exports. The outbreak of the Great War gave a fillip to to the export trade, and Government help now more and more took the form of indirect assistance "The rigid caste system of former times has been broken", said Baron B, Nakona, President of the Tokyo Chamber of Commerce in 1915, 'industry and trade have become honourable professions, every Japanese may now choose an occupation according to his inclinations , those possessing skill and talent rapidly advance and contribute much to the evolution of industry, so that in this sphere Japan faces a pleasant future".[5]

Capital was at first scarce in Japan but the State intervened and created it itself. Capital creation by the State did not take the form of paper money, but domestic and foreign loans. Having provided itself with capital, the State founded banks to lend it to industry at low rates

With industrial advance the capital resources of Japan grew rapidly An eight fold increase occurred between 1914 and 1929 the volume of production increasing five fold during this period

The Bank of Japan Japan's central bank, is described as the 'back bone' of Japanese banking in the financing of industry. Of particular interest to us are the special banks of Japan (6 in number), which include the well known Yokohama Specie Bank concerned with the financing of foreign trade and the Industrial Bank of Japan, founded in 1902, which finances industry There are also other industrial banks, in addition the great Trust companies controlled by a small number of leading Japanese families command considerable resources, which are employed in the financing of industry

Of the loans granted by the commercial banks the greatest part is covered by the security of land and buildings, sureties and general business trust,

There is a tendency towards concentration in Japanese banking. Between 1914 and 1934 the total number of banks fell from 2169 to 597, but the number of branches increased from 3508 to 4713.

Ibid, p. 61

5. The German System.

The relation of banks to industry in Germany has undergone great changes since the crisis of 1931. Before that date the German banking system was largely free from Government interference, and was unspecialised. There was a reconstruction of the entire system in 1932-34. Special types of financing institutions were created to give effect to Government policy. State-aid was extended to banking, and the whole banking system passed under Government control.

An authoritative account of the German system before 1931 is given in the *Handwoerterbuch der Staats wissenschaften.*

Barring the issue of notes, a German credit or commercial bank does everything, for which reason German banks are known as 'universal banks'. A credit bank draws bills, discounts bills, makes loans against collateral (*Lombardvorschuesse*), grants short-term and long-term loans in current account (*gewaehrt Kurz-und-lang-fristigen kredit im Kontokorrent*), acquires shares and bonds, issues letters of credit and does other banking business. Since there is no specialization in banking in Germany (*fuer Spezial Bank in Deutschland kein Raum*, says the H W B)[6] the individual bank, transacting many different kinds of business, tends to be of a large size.

In meeting the requirements of industries, forms of the usual short-term credit are employed. A loan is made by a bank by discounting short-term (3 months') bills. When the bills fall due, they remain unpaid, and a new bank acceptance is prepared and discounted to pay the old debt, which, in other words, means that short-term credit is transformed into long-term credit.

At times, as has been seen in Germany and the United States, the pace of industrial progress is accelerated by inventions and other favourable conditions. Where does the capital required come from ? Naturally from the banks ; long-term loans for block fill the gap until new undertaker's capital is formed to extinguish the loans.

Such loans granted by German credit-banks may be called 'interim block credit' (*zwischen Anlagekredit*). Credit in such circumstances is the fore-runner of one's own capital formation, that is, the profits of the undertaking financed will enable, in time, the loan to be paid off. But they may not, and this is the element of risk in such transactions.

---

[6] *Handwoerterbuch der Staatswissenschaften*, Vol. II, p. 188.

So far we were largely concerned with the money-market. The dealings of German commercial banks in capital (*Kapital Verkehr*) are discussed in the H W B under four heads, financing, loans to Government and municipalities, the issue of shares and bonds, and the sale and purchase of securities on commission.[7] The commercial banks in Germany are members of the Stock Exchange, which is not permitted in England.

In regard to the provision of capital for new enterprises the H W B says:

"If the banks participate in the foundation of joint-stock companies, they are able to do so because they can recover the capital lent with profit by selling the shares. In fact, it has always been tempting for bank capital to call new undertakings into being, and a great many undertakings owe their existence to co-operation between share-capital (*Aktien*), Stock Exchange dealings, and bank capital."[8]

But bankers' technical knowledge of industry is limited and they are generally inclined to withdraw from the foundation of new enterprises in the real sense. Still bankers in Germany and America have maintained their connection with the capital requirements of the business world in one way—when an individual proprietor wishes to be transformed into a joint-stock company, banks help him in procuring the required capital. The writer concludes that the connection between the business of financing (*Finanzgeschaeft*) and the ordinary business of a bank is unquestionably of very great advantage in the industrial development of a country. But he adds that the lending of short term deposits of the money-market in the form of long-term block credit on the capital market, if it exceeds certain limits, may cause trouble.

The close connection between banks and industry takes the form of a personal union', to use Lenin's phrase. In 1932 banks were represented on the boards of 1541 joint stock companies in Germany. From 'the personal union' results the interlocking of industrial and financial capital.

---

[7] *Handwoerterbuch der Staatswissenschaften*, Vol. II, p. 152.

[8] H W B, Supplementary Volume (1929), p. 67.

6. The French System.

For information about France we are indebted to a valuable contribution to the W. A. of Kiel mentioned above (Vol. 45, Part I, Jan 1937) by Prof. Jean Marchal and Paul Hugen, both of Faculté de Droit, University of Nancy[9]. The contribution is entitled 'Relations between the capital market and industry in France'.

The joint-authors say at the outset : "As in all capitalistic countries, so also in France, production and credit are most intimately connected together".[10] Let us see how.

As in all countries, the money market in France is a market for short-term loans and the capital market provides long-term finance. But the two are inter-connected as there are debtors and creditors who are able to operate in both.

How are industries financed ?

The process consists of two phases. First, there are banks which directly participate in industry. They extend credit for moderate and long periods to a new firm, or an old firm planning expansion, and for this receive a number of shares which give the lending bank a certain right of control over the firm concerned. After a few years, when the firm is working and showing profits, the second phase begins—the offer of stocks and shares for public subscription. The lending bank may retain some of the shares which it had acquired, but it disposes of the greater part of the issue, either by itself or with the co-operation of other banks. Thus the bank again places itself in funds and is ready to finance another venture. That is how banks serve as a link between savings and investment.

Three types of banks take a share in the financing of industry: 1. *Etablissement de Credit*. 2. *Banques d' Affaires*, 3 Provincial and Local Banks. These three types have not always retained their original character or functions.

Financing is the chief function of *Le Sociétés de Partictipation* founded by *Etablissements de Credit* but unlike *Banque d' Affaires*, *Societies de Participation* limit their activities exclusively to participation in industry, and neglect other banking business. "Indeed some of them devote themselves to only one form of participation, namely the acquisition of shares, so as to be able to control a group of undertakings".[11] Sometimes they are interested only in a particular branch of an industry of which they possess specialized knowledge.

---

[9] **W. A. (Kiel) for Jan., 1937. ' The relations between the Capital market and Industry in France."**

[10] ***Ibid*. p. 17.**

How industrial securities are marketed. When a bank disposes of the securities it had acquired in participating in the foundation or expansion of an undertaking its participation ends. How is that effected ?

Banques d' Affaires and *Etablissements de Credit* co-operate in the marketing of securities. The preliminary arrangements are made by a *Banque d' Affaires* and the actual sale carried out by *Etablissements de Credit.*

When the amount of the issue is large, the *Banques d' Affaires* form a Konsortium (*Syndicat financier*). Members of the Syndicate take over the whole risk (or issue) and divide it among themselves. Sometimes only a guarantee is given that the whole issue will be placed with the public, the portion remaining unsold becoming the property of members of the syndicate. The guarantee reduces the need for cash on the part of the Syndicate.

There are two methods of dividing the unsold issue among the members of the syndicate. In the *Syndicat à la Parisienne* the unsold issue is divided according to the share of each member in the Syndicate. Thus, if a member had undertaken to sell one-third of the issue, he would be assigned one-third of the unsold issue, even though he had succeeded in selling his original allotment. In the *Syndicat à la Lyonnaise* regard is paid to the success or failure of each member in selling his original allotment. If a member fails in his assigned task, other members of the Syndicate have not to suffer much on his account.

There are three methods of marketing secureties, (1) asking the public to subscribe, (2) sale over the bank counter (3) sale on the stock exchange. Recourse is had to the stock exchange when foreign securities, which are already quoted on foreign stock exchanges, have to be introduced to the French public. In the case of purely domestic securities, the first two methods are usually employed. The financing institutions possess few branches, and therefore the sale over bank counters takes place in ***Etablissements de Credit*** which possess a net-work of branches all over the country.

---

[11] *Ibid.*, p. 17.

Summary. The following facts emerge clearly from our brief study of the capital market in India and other countries.

India. Our banks have failed to forge a direct link between savings and investment. The link that they provide is indirect. They finance trade, which, to that extent, sets capital free for investment in industries.

Germany. Before 1931 Germany had no special type or types of banks for industrial finance. Most of the commercial banks were active both on the money and the capital market. When there was a demand for it, the commercial banks provided long-term credit under the forms of short-term credit. They also took part in the foundation of new undertakings. There is evidence of the association of banks in the management of industry and of inter-locking of finance and industrial capital.

Japan. The industrial development of Japan was rendered possible by State aid. Semi-official banks founded by the State meet the long-term needs of industry and finance the foreign trade of the country. Valuable assistance is also given by Trust Companies. A peculiarity of Japanese banking is the remarkably small proportion of cheque-able deposits. This must be a source of considerable strength to commercial banks.

France. Of the greatest importance in the direct financing of industry are *Sociétés de Participation*, which are not independent institutions, but connected with and controlled by banks. There is close co-operation, as in Germany, between share-capital, the stock exchange, and bank capital. Several types of institutions, including commercial banks, have, in the past, assisted in the direct financing of industry.

The conditions under which banks can successfully undertake industrial finance may now be clearly stated. They deserve attention. We assume :—

1. That capital is available for investment.

2. That the public is willing to invest, or is investment-minded.

3. That banks enjoy public confidence,

4. And last, but not least, that general political and economic conditions are such as to make investment profitable.

All these conditions must be assumed to exist for successfu industrial finance. Where capital is scarce, or shy ; where people prefer to hoard their savings instead of investing them where banks are not strongly entrenched in public confidence ; and, lastly, where general conditions, due to a combination of political and economic circumstances, create a feeling of uncertainty in regard to industrial profits, it is impossible for banks to call new industries into being. Suppose a commercial bank finances a new enterprise. It acquires shares of and a controlling interest in the undertaking. Ultimately these shares have to be disposed of. When the moment for the offer of securities for public subscription arrives, suppose the subscribers do not appear. The bank or the Konsortium will be left 'holding the baby', and industrial finance will come to an abrupt end.

CHAPTER XII

THE FINANCING OF AGRICULTURE

The financing of agriculture is not a simple matter. The assistance which credit agencies can render to agriculture is determined, among other things, by the nature of agriculture itself. Agriculture cannot expect to have the same credit facilities as manufacturing industries for the following reasons :—

(*i*) Manufacturing industries tend to be organized on a very large scale, while agriculture remains scattered, individualistic, small scale, and chaotic.
(*ii*) Agricultural work is largely incapable of subdivision into simple processes which may be mechanized.
(*iii*) Agriculture largely depends on factors which the farmer cannot control, *e.g*, weather.
(*iv*) It is difficult for the farmer to curtail or increase production of particular crops according to the fall or rise in their prices.
(*v*) The nature of farm economy develops social characteristics and habits of mind which are an obstacle to corporate effort.

Indian agriculture is subject to special handicaps, which are the following :—

1. The average agricultural holding is small and the quality of the land is generally poor.
2. Holdings consist of fragments scattered over different places.
3. Yield per acre is very low.
4. The cultivators, who are illiterate and ignorant, are not in a position to benefit much by scientific research which has led to increased productivity in other countries.
5. Few cultivators follow any subsidiary occupations.
6. They carry a heavy load of debt.

The result of all these factors is that agriculture in India is carried on "as *a mode of living rather than for any profit*."

The cultivator requires credit both for the long and the short period. Short-term credit is required for the marketing of crops and for production. Long-term credit is required for (*i*) the purchase of land, (*ii*) the provision of the more expensive, and durable improvements, and (*iii*) re-paying old debts.

1. Co-operative Credit. Act of 1904.

In refreshing contrast to their *laissez-faire* attitude in regard to industrial finance, the Government have taken active steps to organise agricultural credit.

The establishment of agricultural banks was recommended by the Famine Commission of 1901. The small cultivator all over the country was financed by the Mahajan, who charged exhorbitant rates of interest. Far from being a help to agriculture, the *sowcar* had become, as the Famine Commission pointed out, in some places an incubus upon it.

Even before the Famine Commission of 1901 reported, the subject of co-operation, as a means of providing finance to the small cultivator on reasonable terms, had attracted the attention of some Local Governments. The first step towards the investigation of the possibilities of establishing co-operative credit societies in India was taken in Madras. An indigenous institution called *Nidhis* existed in that Presidency, which were organised on co-operative lines, and had a paid-up capital of 75 lakhs, with some 36,000 members. The *Nidhis* were on the whole working successfully, and they suggested the establishment of co-operative credit societies in India. The Madras Government deputed one of their officers, Mr. (later Sir) Fred. Nicholson to make a study of co-operation, and in 1899 he forwarded his monumental report on the subject to the Government of India. The Government of the United Provinces, similarly, had deputed Mr. Dupernex to make enquiries into the subject in relation to Indian conditions, and his book entitled "*Peoples' Bank for Northern India*" appeared about the same time.

The proposal was then referred in its more general form by the Government of India to Local Governments for preliminary consideration and suggestions. The opinions of Local Governments were considered in June, 1901, by a Committee under the chairmanship of the Finance Member, Sir Edward Law. The Committee reported favourably in 1903, and attached a draft Bill to their report. The proposals of the Committee were referred to Local Governments for criticism, and when their replies had been received the Government of India took legislative action to create co-operative credit societies.

New legislation was necessary as the old Companies Act of 1882, with its numerous sections and elaborate provisions, was unsuited to the new type of societies intended to be established. Three things, chiefly, had to be done : (1) the new societies had to be excluded from the operation of the general law, and provisions framed adapted to their constitution and objects ; (2) it was desirable to confer upon them special privileges and facilities ; and (3) it was necessary to take precautions with the object of preventing speculators and capitalists from getting control of them.

The object of establishing co-operative societies was defined as "the encouragement of individual thrift and of mutual cooperation among the members, with a view to the utilisation of their combined credit, by the aid of their intimate knowledge of one another's needs and capacities, and of the pressure of local public opinion."

A two-fold classification of societies into urban and rural was adopted. In the case of both classes it was provided that the members must be small men ; that they must be residents of the same neighbourhood ; that new members shall be admitted by election only ; that loans must be made only to members ; and that money shall not be lent on mortgage. Further, the interest in a society held by a single member was limited, so as to prevent an individual from obtaining control of the society ; and in order to prevent speculation, shares were made transferable only subject to certain restrictions. The Act passed in 1904 also provided a simple form of registration and to deal with fraud, or bogus co-operative societies which might be established under the Act, power of compulsory dissolution, subject to appeal to the Local Government, was reserved.

Other features of the Act of 1904 were as follows : unlimited liability was insisted upon in the case of rural societies ; it was laid down that profits were not to be directly divided among the members, and that any surplus that might accrue should either be carried to a reserve fund or be applied to reducing the rate of interest upon loans ; the society was forbidden to borrow money without sanction ; and pawn-broking was prohibited, but the society was allowed to receive agricultural produce as security, or in payment of a loan.

Limitation of liability and the distribution of profits, subject to the creation of a sufficient reserve fund, were allowed in the case of urban societies.

The privileges conferred upon the societies by the Act of 1904 were as follows ; (1) shares and other interest of members in the capital of a society were exempted from attachment for private debts ; (2) societies were relieved from the necessity of obtaining letters of administration or a succession certificate ; (3) they were given a *lien* upon certain forms of property when created or acquired by means of a loan from them until the loan was repaid ; and (4) an entry in the books of a society was made *prima facie* evidence in a suit to recover money due to it. The societies and their operations were also exempted from income-tax, stamp duties and registration fees, and finally provision was made for compulsory inspection and audit of the societies by a Government officer.

The operation of the Act was restricted to credit only. The chief object of the measure, as we have seen, was to relieve agricultural indebtedness.

2. The Act of 1912.

The Act of 1904 was amended in 1912, and the amended Act is still in force throughout the country, except in Bombay and Burma, where it was replaced by local legislation in 1925 and 1927 respectively. The amendment of the Act of 1904 was necessary for the following reasons :

(1) The Act of 1904 did not apply to co-operative societies established for production, distribution or other objects, except the provision of credit. The establishment of credit societies had led to the founding of other classes of co-operative societies, and it was desirable that the privileges extended by the Act to co-operative credit societies should be extended to these other societies

(2) In the Act of 1904 societies were classified according as they were "urban" or "rural," and the liability of rural societies was unlimited The distinction was found artificial, and in practice inconvenient. In the Act of 1912 societies were divided into those with limited and those with unlimited liability, but the principle was retained that agricultural credit societies must, as a general rule, be with unlimited liability.

(3) The Act of 1904 did not contemplate that societies with unlimited liability should distribute profits. Such societies, however, had come into existence in several Provinces, and were doing useful work. It was proposed to legalise their existence and to permit an unlimited society, with the sanction of the Local Government, to distribute profits.

(4) The Act of 1904 was framed to meet the requirements of primary credit societies only ; it made no provision for the higher finance of the movement. Unions and central banks are co-operative credit societies the members of which are other co-operative credit societies which they finance. They had naturally come into existence soon after the initiation of the movement, and it was necessary to recognise their existence.

The Act of 1912 incorporated these features.

3. The Punjab Movement.

In the Punjab, when the movement started, the Registrar, Co-operative Credit Societies, sought to promote two other types—one which he called the "money deposit type," and the other the "Mianwali type." The money-deposit type had no share capital, but operated with fixed deposits (bearing in terest) obtained as far as possible entirely from members, and made advanced to members at a higher rate of interest than that allowed to depositors. This type of society was meant for the prosperous villages of the central Punjab.

The Mianwali type was recommended for poor communities. The capital of these societies was raised by voluntary grain subscriptions after the *rabi* harvest. The value of the subscriptions was credited to the member's account, and was not returnable for 10 years. The grain subscribed was partly kept for seed advances at the next sowing and partly sold in order to provide funds for money advances. In the beginning advances were given only for seed and purchase of cattle. Interest was charged at rates varying from 5 to 16 per cent and was generally payable in grain. The society's profit consisted of interest, and in cases of advances for sowing, of the difference in the price of grain at harvest and at sowing time.

The Registrar, however, did not take long to realise that both the money-deposit and the Mianwali types of society were not suited to the Punjab, and were not likely to become popular. The Mianwali type offered no inducement for saving, as it allowed no interest on deposits. In the money-deposit type the element of true co operation was lacking—the society financed the poorer members with money borrowed from the wealthier members, or at their risk. It was more a philanthropic institution than a co operative credit society.

"The type of society coming into favour in the Punjab," wrote Mr. Wilberforce in his report for 1906-07, "is one adapted from the system popularised in Italy by Signor Luzzati." In this type, adopted with certain modifications in the Punjab, the members became share-holders by payment of 10 compulsory annual instalments. No dividends were to be declared for 10 years, when three quarters of the profits were to be divided among the share-holders, the remaining fourth being transferred to the reserve fund.

This type of society, the Registrar points out, was devised not by any Government official, but by the zamindars of the Gurdaspur District. He regarded the share-capital society as possessing special advantages from the point of view of the Punjab agriculturist. The Punjab agriculturist was thrifty enough—encouraging thrift among the Punjab peasants the Registrar likened to "bringing coal to Newcastle"—but he had to learn to make a proper use of his thrift.' The dividend which a member of this type of society would receive after 10 years was like a pension, for the sake of which he might forego his petty extravagances. At the same time an institution is created which finances him on reasonable terms.

---

* *Report* for 1906-07, p. 3.

The development of co-operative credit in the Punjab has been on the lines foreseen in 1906-07. Share-capital preponderates, while deposits from members are comparatively small.

The growth of the co-operative movement (including other types besides co-operative credit) in the whole of India (including Indian States) is shown by the following statement:

4. Progress of the Co-operative Movement, 1910-11 to 1939-40.

	No. of societies (in thousands)	No. of members (Lakhs)	Working capital (crore rupees)
Average, 1910-11 to 1914-15	12	5·5	5·48
„ 1915-16 to 1919-20	28	11·3	15·18
„ 1920-21 to 1924-25	58	21·5	36·36
„ 1925-26 to 1929-30	94	36·9	74·89
„ 1930-31 to 1934-35	1,06	43·2	94·61
1937-38	1,11	48·5	103·02
1938-39	1,22	53·7	106·56
1939-40	1,37	60·8	107·10

Source: Reserve Bank's Report entitled: "*Review of the Co-operative Movement in India, 1939-40*", Bombay, 1941, p. 4.

Substantial progress was made before the Great Depression, but co-operation had only touched the fringe of the problem of indebtedness.

*Proportion of Members of Agricultural Societies to Families in Rural Areas (1928)**

	All societies, per cent.	Credit societies, per cent.
Ajmer-Merwara	15·4	15·0
Assam	2·9	2·9
Bengal	4·4	3·8
Bihar and Orissa	3·2	3·1
Bombay	10·0	8·7
Burma	3·9	3·7
Central Provinces and Berar	2·5	2·3
Coorg	36·2	36·2
Delhi	11·5	11·5
Madras	8·3	7·9
N. W. F. Province ...	0·2	0·2
Punjab	10·9	10·2
United Provinces	1·8	1·8

* *Report of the Agricultural Commission*, p. 447.

Among the major Provinces, the largest proportion of the rural population affected by the co-operative movement was in the Punjab, but even in the Punjab 89 per cent of the rural population was not touched by the movement. This proportion for the other Provinces was: Bombay 91·3; Madras 92·1; Bengal 96·2; Burma 96·3; Central Provinces and Berar 97·7 and the United Provinces 98·2.]

5. The Co-operative Movement during the Great Depression

The heavy fall of agricultural prices made the recovery of loans difficult. "The accumulation of heavy overdues and the freezing of the assets of societies resulted in the clogging of their business and paralysed the working of the co-operative movement over large parts of the country."* In some provinces such as C. P. and Berar, Orissa and Bengal, the movement 'nearly collapsed'. In the United Provinces it was never of any great importance.

The following suggestions were made by the Reserve Bank as to how co-operative societies should work in the future:—

(*i*) Loans must be strictly limited to cultivation finance.

This should ordinarily mean expenses in connection with agricultural operations like ploughing, sowing, reaping etc. But loans may be made for the purchase of cattle and implements, and also for the maintenance of the farmer's family till the next harvest.

(*ii*) There should be no over-financing or over-lending.

(*iii*) If loans have to be made which cannot be repaid in one year (*e.g.*, for replacement of cattle), such loans should not extend to say more than two years, and provision should be made for their repayment in equal instalments.

(*iv*) All loans must be issued in instalments as money is required, not in one lump sum.

(*v*) If loans are not repaid within the stipulated period, immediate steps must be taken to recover the amount, unless there is a crop failure.

The Reserve bank was of opinion that a reduction of co-operative debts was necessary, but the rise of prices during the war has made the situation easier.

---

* *Review of the Co-operative Movement in India, 1939-40, p. 7.*

6. The Multi-Purpose Society.

In the Reserve Bank's scheme of rehabilitation of the co-operative movement, the 'multi-purpose society' plays a very important role. The existing credit societies are to be converted into multi-purpose societies. A multi-purpose society not only grants credit but does almost everything else. It gets the old debts of its members liquidated through a land mortgage bank ; arranges for the co operative sale of agricultural produce : purchases seed for growing improved varieties of crops : saves litigation expenses by means of arbitration ; carries out consolidation of holdings ; supplies improved implements ; encourages its members to take up subsidiary industries ; introduces better-living measures ; effects the curtailment of ceremonial expenditure; removes insanitary habits ; provides medical relief, and so on.

The multi-purpose society made no appeal to the Agricultural Commission of 1928. The Commission favoured the single-purpose society for the reason that, on account of its complexity, the multi-purpose society would tend to be controlled by a few intelligent or educated persons, and thus the true spirit of co-operation would be lost. The single-purpose society means a specialised society for each separate object with its own constitution, area and membership. We are, however, told that the multi-purpose idea is 'growing'.

7. Land Mortgage Banks.

The deposits which the ordinary credit society receives are withdrawable at short notice ; the loans made to it are also for short periods. It follows that the ordinary credit society cannot engage in business in which its small resources would be tied up for a long time, or lend money on security which is not easily realisable.

It is also obvious that if credit societies refuse to make advances to their members on the security of their land, they will be driven to the money-lender for long-term loans of large amount. Hence the need for a new type of financing agency—the Land Mortgage Bank.

The Central Banking Enquiry Committee made a number of useful recommendations about land mortgage banks. They are summarised below :

1. The objects of such banks should be : (*a*) the redemption of land and houses of agriculturists, and the liquidation of old debts,

(b) the improvement of land and methods of cultivation and the building of houses of agriculturists, and (c) the purchase of land in special cases.

2. Loans might be granted for stated periods of 5, 10, 15 or 20 years. The amount of individual loans should be limited to a maximum of Rs. 5,000, and should in no case exceed 50 per cent of the value of the mortgaged security.

3. The repayment of loans should be by a system of equated payments, the whole loan being thus repaid at the end of a period of years.

4. The working capital should be derived from two sources, *viz.*, share capital and debentures. The foreign experts whom the Committee consulted suggested that the proportion of debentures to share capital should be 5 : 1, but the Committee left it to the discretion of co-operators in each province to raise debentures to the extent they considered necessary. The Committee, however, insisted that the value of the debentures outstanding should in no case exceed the outstanding amount under mortgages given by the borrowers and over which the debenture holder has a floating charge.

5. The debentures should be issued by a central institution, called the Provincial Land Mortgage Corporation, from which the district mortgage banks should be entitled to obtain the necessary finance. This Corporation is to be entirely distinct from the Provincial Co-operative Bank.

6. The Committee definitely recommended that a land mortgage bank should have the power of foreclosure and sale without recourse to civil courts, subject to the right of the aggrieved party to question this action of the bank in the civil courts.

7. The Committee noted that the Land Alienation Act (where it existed) tended to the replacement of the non-agriculturist by the agriculturist money-lender, which necessitated the protection of the small peasant proprietor against the bigger agriculturists; led to the restriction of loans by the non-agriculturist money-lender and enhancement of his rates; and was a source of trouble in so far as it impeded the free transfer of land. "Moreover, the double object of preventing the free mortgage and sale of agricultural land and the provision of credit for the economic benefit of the agriculturist through co-operative land mortgage banks, cannot easily be achieved."* The land mortgage banks must have the right to take possession of land through foreclosure on default of payment of the instalment of the loan and to sell it. But the sale may be to agricultural classes according to the provisions of the prevailing legislation.

8. Finally, the Committee recommended the development of well-organised joint-stock land mortgage banks for the benefit of land-owners who cannot be adequately served by co-operative land mortgage banks.

The first land mortgage bank was organised in 1920 at Jhang in the Punjab, and a few more banks were organised in the Punjab in the following years. They were "far from successful". The reasons are the Great Depression, the fall in land values and the Land Alienation Act.

---

* *Report of the Central Banking Enquiry Committee*, p. 170.

The real beginning of land mortgage banking in India was marked by the establishment in 1929 of the Central Land Mortgage Bank in Madras with Government support. Up to the end of 30th June, 1940, this Bank had floated debentures guaranteed by Government for principal and interest to the extent of over Rs. 2½ crores. There is no Land Alienation Act in Madras; other factors contributing to the success of the bank are active assistance by Government, care in the valuation of land, and summary powers enjoyed by the bank for recovery of defaulted instalments.

A Central Land Mortgage Bank was also organised in Bombay in 1935 on the lines of Madras to finance primary banks in the province. In other provinces little progress has been made in this direction.

An examination of the position by the Reserve Bank shows that land mortgage banks have been concerned too much with the redemption of old debts and too little with the improvement of agriculture and methods of cultivation. Loans for land improvement may be made at lower rates than for other purposes. Greater co-operation is also suggested between the activities of land mortgage banks and those of other co-operative societies and the Agricultural Department. In the matter of redemption of old debts, there should be co-ordination between Debt Conciliation Boards and land mortgage banks.

9. Agricultural Non-Credit Co-operation.

The chief forms of agricultural non-credit co-operation are the following: (1) co-operative marketing, (2) better-living and better farming societies, (3) consolidation of holdings societies, (4) anti-malarial and health co-operative societies, (5) miscellaneous types.

In connection with marketing reform two measures enacted by the Central legislature may be mentioned: The Agricultural Produce (Grading and Marketing) Act passed in 1937 and the Standards of Weight Act passed in 1939. The former defines standards of quality and methods of marketing in respect of scheduled products.

Marketing legislation, to which we have referred before, has been undertaken in several provinces.

The area of operations of a marketing society is much wider than that of a credit society, and its liability is limited. Usually the produce to be marketed is pooled and graded before sale, but many societies also sell the produce of their members on a commission basis.

Marketing societies more often lose than gain by holding over a crop for a rise in price.

Provincial governments have assisted marketing societies by means of subsidies for the construction of godowns and other purposes.

In Bombay there are marketing societies for the sale of cotton, gur, tobacco, chillies, mangoes, paddy, fruits, vegetables, etc.

In Madras marketing societies usually advance loans against produce. In U. P. sugarcane marketing societies also encourage their members to produce better seed and manures. Marketing societies are also doing useful work in Bihar. Price instability makes the operations of marketing societies difficult.

Better living and better farming is particularly associated with rural reconstruction. Much good work has been done in the United Provinces and the Punjab. Better farming societies supply better seeds and implements and persuade their members to adopt better methods of cultivation.

The Punjab has led in the consolidation of holdings. Consolidation is carried out through the agency of the revenue staff, now without any charge.

Bengal initiated health co-operatives. Their programme includes improvement of village sanitation and education of village people in public health.

The miscellaneous types include cattle breeding, crop protection, joint cultivation, fencing, dairying, fruit growing, land reclamation, colonisation, dam construction, irrigation, drainage, grain banks and stores, redemption of land revenue, canal silt clearance, credit, education, arbitration, etc.

10. Urban Co-operative Movement.

The chief forms of urban co-operation are the following : (1) credit societies and banks (2) employees' societies, (3) consumer's co-operative stores, (4) artisans' and weavers' societies (5) milk unions and societies (6) miscellaneous types.

Urban credit societies and banks are the most important feature of the urban co-operative movement. The liability of members is usually limited and the area of operations is wider than that of the rural credit society. Urban co-operative societies advance loans mostly to small traders, artisans, and salary earners on personal security, as well as against gold, silver and produce.

Urban banking is well developed in Madras and Bombay. Employees' societies consist of salary and wage-earners' societies. They help their members to obtain loans at reasonable rates of interest, but their real object is the promotion of thrift. Mill-hands' societies also aim at relieving their members from the burden of past debts carrying usurious rates of interest.

Consumers' stores are well known. They exist in several provinces. Some stores make the mistake of selling cheaper than the market price. This must weaken reserves.

Weavers' societies are important in Madras. At the end of 1938-39 the Punjab had 341 industrial societies with a membership of 5,579.

Milk societies in Madras and U. P. not only make pure milk available to town dwellers, but assist producers to obtain fair prices for their product.

The miscellaneous types include societies for insurance, housing, and supply of students' requisites. A considerable number of students' stores have been organised in most of the provinces.

11. Co-operative Trends.

The Review of the Co-operative Movement (1939-40), published by the Reserve Bank, on the whole gives a pleasing picture of the co-operative movement. There is no aspect of economic or social life, whether in the towns or in the villages, which is unaffected by the co-operative movement. In the villages, cultivators are being freed from debt ; they are taught methods of adding to their income by taking up subsidiary occupations ; they are supplied with better seeds ; their cultivation is improved, and in a dozen different ways they are introduced to better-living. Artisans and traders have not been neglected, and urban societies, besides endeavouring to reduce the indebtedness of their members, supply them with consumers' goods, including pure milk and *ghi*, and even build houses for them. We are not told whether the multi-purpose idea has started to 'grow' in the towns as well, as it is growing in the villages.

While all this and more may be true, the extent to which co-operation has affected the masses of India is extremely small at present. The total number of members of all co-operative societies in British India in 1939-40 was 55 lakhs; the estimated population for mid-year 1939, is 27,83 lakhs (census population 1941, 29,58 lakhs). The co operators represented about 2 per cent of the estimated population in 1939. Taking the average size of the family as 4·5, and assuming that each co-operator represents a family, then 9% of families were affected by the co-operative movement in 1939-40.

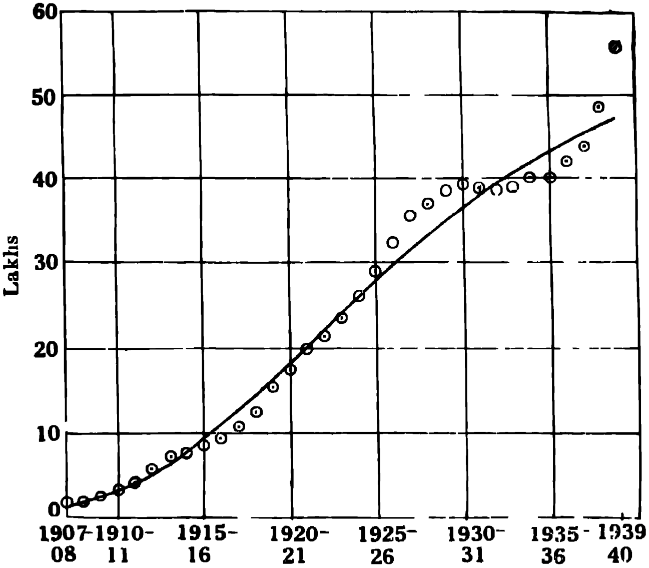


Fig. 33.

Showing the Gompertz curve fitted to members of co-operative societies in British India from 1907-08 to 1939-40.

The equation to the fitted curve is

$$Y = 57{\cdot}85742 \quad ({\cdot}2094099)^{{\cdot}91162568^{x}}$$

See Appendix E table I (Chapter XII)

The trend of co-operation between 1907-08 and 1939-40 may be studied with the help of the Gompertz curve (Fig. 33).

will be seen that the growth of members practically ceased during the depression years, but a rapid increase began in 1936-37 and by 1939-40 the number of members had increased to a little over 55 lakhs. The Gompertz curve pursues its course, ignoring both the cessation of growth during the depression and the phenomenally rapid growth thereafter. The maximum number of members, which the curve would approximately, but never exactly, reach is about 58 lakhs (Log $K = 1\cdot7623590 6 = 57\cdot86$ lakhs).

The Gompertz curve takes a too pessimistic view of the co-operative movement. Its pessimism is due to the stationary condition of the movement during the depression.

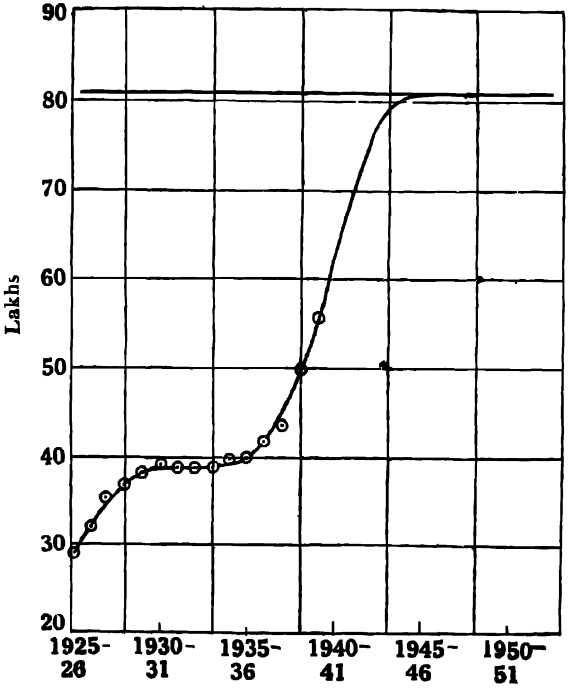


Fig. 34.

Showing a curve fitted to "members" of co-operative societies in British India from 1925-26 to 1939-40. The curve brings out the stationary condition of the movement between 1930-31 and 1935-36 and rapid growth thereafter.

See Appendix E, Table 8 (Chapter XII)

Another curve, called the modified exponential, gives us a better maximum, about 262 lakhs. It promises about 123 lakhs of co-operators in 2001 A.D. and 192 lakhs a century later.

There is nothing in the trend of the co-operative movement between 1907-08 and 1939-40 to suggest that it will solve our economic problems within a reasonable period of time.

Fig. 34 shows a curve fitted to the members of co-operative societies between 1925-26 and 1939-40. It clearly brings out the different phases of the movement during this period. If the exceptional conditions created by the war continue for some time, the number of members of all co-operative societies may be expected to increase as shown below :

Year	**No of Members Lakhs**
1940-41	61·86
1941-42	69·08
1942-43	74·08
1943-44	78·86
1944-45	80·24
1945-46	80·85

A return to agricultural prices ruling before the war will check progress.

APPENDIX E (CHAPTER XII)

The Trend of the Co-operative Movement.

1. ***Fitting the Gompertz curve to members of co-operative societies*** :

The calculations made are shown in the following table :

Table E. I.

The Gompertz Curve fitted to members of Co-operative Societies in British India, 1907-08 to 1939-40.

Year	x	No of Members, lakhs (y)	Log y	$(\log a)b^x$	Log y_c = log k + $(\log a)b^x$	y_c
1907-08	0	1·5	·17609	–1·6790027	0833564	1·211
1908-09	1	1·8	·25527	–1·5306218	·2317373	1·705
1909-10	2	2·2	·31242	–1·3953542	·3670049	2·328
1910-11	3	3·1	·49136	–1·2720406	·4903095	3·093
1911-12	4	4·0	·60206	–1·1596248	·6027343	4·006
1912-13	5	5·4	·73239	–1·0571434	7052157	5·072
1913-14	6	7·0	·84510	– ·9637192	·7986399	6·290
1914-15	7	7·6	·88081	– ·8785512	·8838079	7·653
1915-16	8	8·4	·92428	– ·8009100	·9614491	9·151
1916-17	9	9·6	·98227	– ·7301300	1·0322291	10·770
1917-18	10	10·5	1·02119	– ·6656052	1·0967539	12·590
Σ_1 Log y			7·25324		7·2532380	
1918-19	11	12·4	1·09342	– ·6067827	1·1555764	14·31
1919-20	12	15·2	1·18184	– ·5531586	1·2092005	16·19
1920-21	13	17·6	1·24551	– ·5042736	1·2580855	18·12
1921-22	14	19·8	1·29667	– ·4597087	1·3026504	20·08
1922-23	15	21·2	1·32634	– ·4190823	1·3432768	22·04
1923-24	16	23·4	1·36922	– ·3820162	1·3803129	24·01
1924-25	17	26·0	1·41947	– ·3182830	1·4140761	25·95
1925-26	18	28·8	1·45939	– ·3175038	1·4148553	27·85
1926-27	19	32·0	1·50515	– ·2894446	1·4729145	29·71
1927-28	20	35·0	1·54407	– ·2638650	1·4984941	31·51
1928-29	21	36·7	1·56467	– ·2405161	1·5218130	33·25
Σ_2 Log y			15·00125		15·0012555	
1929-30	22	38·0	1·57978	– 2192880	1·5430711	34·92
1930-31	23	38·9	1·58995	– 1999086	1·5624505	36·51
1931-32	24	38·6	1·58659	– ·1822418	1·5801173	38·03
1932-33	25	38·3	1·58320	– ·1661363	1·5962228	39·47
1933-34	26	38·5	1·58546	– ·1514511	1·6109050	40·82
1934-35	27	39·4	1·59550	– ·1380694	1·6242897	42·10
1935-36	28	39·5	1·59660	– ·1258676	1·6364915	43·30
1936-37	29	41·6	1·61909	– ·1147442	1·6476149	44·42
1937-38	30	43·5	1·63849	– ·1046037	1·6577554	45·47
1938-39	31	48·3	1·68395	– ·0953594	1·6669997	46·46
1939-40	32	55·3	1·74273	– ·0860331	1·6754260	47·36
Σ_3 Log y			17·801304		17·8013439	

$$b^{n} = b^{11} = 0·36139473232$$
$$b = 0·9116256778.$$

$\log a = -1{\cdot}679002273$ $\qquad \log k = 1{\cdot}76235906.$

$\log y = 1{\cdot}76235906 - (1{\cdot}67900273)({\cdot}911256778)^x$

or $\log y = 57{\cdot}85742({\cdot}2094099)^{{\cdot}91162568^x}$

2. ***Fitting the modified exponential to the same data*:**

The modified exponential has the form :

$y = k + ab^x$ $\qquad a = -265{\cdot}250362$

$k = 261{\cdot}8284395$ $\qquad b = {\cdot}99309073$

$b^n = b^{11} =$ 92657005.

Table E. II.

Modified Exponential fitted to Members of Co-operative Societies in British India, 1907-08 to 1939-10.

Year	x	No of members, Lakhs (y)	ab^x	$k + abx$ (y_c)
1907-08	0	1·5	−265·250	−3·422
1908-09	1	1·8	−263·418	−1·590
1909-10	2	2·2	−261·598	·230
1910-11	3	3·1	−259·790	2·038
1911-12	4	4·0	−257·995	3·833
1912-13	5	5·4	−256·213	5·615
1913-14	6	7·0	−254·442	7·386
1914-15	7	7·6	−252·684	9·144
1915-16	8	8·4	−250·939	10·889
1916-17	9	9·6	−249·203	12·625
1917-18	10	10·5	−247·483	14·343
$\Sigma_1 y$		61·1*		*61·091
1918-19	11	12·4	−245·773	16·055
1919-20	12	15·2	−244·075	17·753
1920-21	13	17·6	−242·383	19·445
1921-22	14	19·8	−240·714	21·114
1922-23	15	21·2	−239·051	22·777
1923-24	16	23·4	−237·399	24·429
1924-25	17	26·0	−235·759	26·069
1925-26	18	28·8	−234·130	27·698
1926-27	19	32·0	−232·512	29·316
1927-28	20	35·0	−230·906	30·922
1928-29	21	36·7	−229·310	32·518
$\Sigma_2 y$		268·1*		*268·096
1929-30	22	38·0	−227·726	34·102
1930-31	23	38·9	−226·153	35·675
1931-32	24	38·6	−224·590	37·238
1932-33	25	38·3	−223·038	38·790
1933-34	26	38·5	−221·497	40·331
1934-35	27	39·4	−219·967	41·861
1935-36	28	39·5	−218·447	43·381
1936-37	29	41·6	−216·938	44·890
1937-38	30	43·5	−215·397	46·431
1938-39	31	48·3	−213·950	47·878
1939-40	82	55·3	−212·472	49·356
$\Sigma_3 y$		459·9*		*459·938

Thus :

$$y = 261{\cdot}8284895 - 265{\cdot}250362({\cdot}99309073)^x.$$
$$(x = 0 \text{ for } 1907\text{-}08)$$

The modified exponential is fitted like the Gompertz curve :

$$b^n = b^{11} = \frac{\Sigma_3 y - \Sigma_2 y}{\Sigma_2 y - \Sigma_1 y}$$

$$a = (\Sigma_2 y - \Sigma_1 y)\frac{b-1}{(b^n - 1)^2}$$

$$K = \frac{1}{n}\left[\Sigma_1 y - \left(\frac{b^n - 1}{b-1}\right)a\right]$$

The modified exponential shows the number of co-operators in 1907-08 and 1908-09 as negative, which has no meaning.

3. *A curve fitted to members of co-operative societies, 1925-26 to 1939-40.*

This curve has been fitted like the population curve, which was explained in Appendix A to Chapter I.

Table E. III.

Members of Co-operative Societies in British India, 1925-26 to 1939-40.

Year.	Number of members (1,000).	$\log \frac{x}{a-x}$	$t - t_1$	K_0	K_c	y_c	d
1925-26 ..	2878	−·259078	−10·5	·02467	02539	2846	−32
1926-27 ..	3195	−·186522	−9·5	21963	01962	3196	+1
1927-28 ..	3504	−·118194	−8·5	·01391	·01480	3469	−35
1928-29...	3669	−·082346	−7·5	01098	·01112	3665	−4
1929 30...	3804	−·053228	6·5	·00819	·00872	3787	−17
1930-31 ..	3891	−·033431	−5·5	·00628	·00778	3853	−38
1931-32 ..	3862	−·040759	−4·5	·00906	·00845	3875	+13
1932-33...	3832	−·047205	−3·5	·01349	·01088	3875	+43
1933-34 ..	3846	−·044197	−2·5	·01768	01523	3875	+29
1934-35 ..	3937	−·024659	−1·5	·01645	02168	3900	37
1935-36 ..	3952	−·021440	−·5	·04288	·03036	3981	+29
1936-37...	4155	·022084	·5	04417	01144	4149	−6
1937-38 ..	4350	·063995	1·5	·04266	·05510	4436	+86
1938-39 ..	4829	·168646	2·5	·06746	·07146	4871	+25
1939-40...	5534	·333106	3·5	·09523	·09071	5470	−64
							+226 −233

$\Sigma(y) = {\cdot}43274$, $\Sigma(xy) = 1{\cdot}19044$, $\Sigma(x^2y) = 11{\cdot}88428$

$\Sigma(x^3y) = 41{\cdot}27788$.

The assumed maximum (a) is 8,104,000. The origin is placed in the middle of the years 1935-36 and 1936-37, so that $t - t_1$ for 1936-37 is 5 and that for 1935-36, −·5. A year is taken as 1 unit. The equation to the curve fitted to the observed K's is

$$y = 01088 + {\cdot}003367x + {\cdot}0009627x^2 + {\cdot}00002649x^3.$$

CHAPTER XIII

CENTRAL AND PROVINCIAL FINANCE

There are four landmarks in the study of central finance since 1913-14 : (1) the last world war or the Great War of 1914-18 ; (2) the separation of central from provincial finance effected on the 1st of April, 1921 ; (3) the Great Depression, which seriously affected the revenue position in 1931, and (4) the introduction of provincial autonomy with effect from 1st April, 1937.

1. Central Revenue and Expenditure, 1913-14 to 1920-21.

The total revenue of the Government of India in 1913-14 amounted to about 128 crores. The principal sources of revenue were the following :

		1913-14 Crore Rs	1920-21 Crore Rs
Land Revenue	...	32·1	32·0
Opium	...	2·4	3·5
Salt	...	5·2	6·8
Stamps	...	8·0	11·0
Excise	...	13·3	20·4
Customs	..	11·3	31·9
Income tax	...	2·9	22·2
Total Revenue	...	127·8	215·0

At the outbreak of the Great War the general rate of the customs tariff was 5% *ad valorem*, and the yield was a little over 11 crores.

The income-tax was levied according to the Act of 1886. This Act applied to all incomes except those derived from agriculture. Ordinarily only incomes which were less than Rs. 500 were exempted from the tax, but the exemption limit was raised to Rs. 1,000 in 1903. Incomes between Rs. 1,000 and Rs. 4,999 paid 4 pies in the rupee and incomes above that amount were taxed at the flat rate of 5 pies in the rupee. As is seen from the figures given above, the land revenue is an inelastic source of income. The need for more revenue during the Great War was met principally by changes in the customs duties and the income-tax rates. In 1916 progression was introduced in the income-tax up to Rs. 25,000 and in 1917 came the first Super-tax Act. The exemption limit was raised to Rs. 2,000 in 1919. In that year the combined income-tax and super-tax rates amounted to 4 As. in the rupee.

Military expenditure increased during the War, but the greatest increase took place after the signing of the armistice in November, 1918. This was due to the reorganisation of the army.

2. Separation of Provincial from Central Finance.

There was a close connection between Imperial and Provincial finance before the introduction of the Montague-Chelmsford Reforms. Certain heads of revenue were divided equally between the Imperial and Provincial Governments; the remaining sources of revenue were entirely Imperial or entirely Provincial. In most of the Provinces the divided heads were: land revenue, excise, stamps, income-tax and the income from large irrigation works. The entirely Provincial heads were: forests, registration, the receipts under the spending departments managed by Local Governments such as ordinary public works, police, education, medical, courts and jails. The following sources of revenue were wholly Imperial: opium, salt, customs, mint, railways, posts and telegraphs, military receipts, and tributes from Indian States. Like heads of revenue, some of the heads of expenditure were commonly shared by Imperial and Local Governments, while others were entirely Local or Imperial. The responsibility for all outlay connected with defence, railways, interest on debt, posts and telegraphs and the Home Charges rested with the Imperial Government; the Provinces were responsible for expenditure relating to land revenue and general administration, education, the medical department, police, jails and forests. The common heads of expenditure were irrigation and ordinary public works.

The Imperial Government, further, acted as a banker to the Provincial Governments, as it kept their balances. These balances consisted of large grants made by the Imperial Government to the Provinces in the past for expenditure on education, irrigation, sanitation, agricultural and veterinary development and other similar objects. Provincial Governments could not spend the money at once and the result was the accumulation of balances.

The abolition of divided heads involved the disappearance of Privincial figures from the Indian Budget. Land revenue, irrigation, stamps and excise were made wholly Provincial, and the income-tax wholly Imperial.

The main reason for this important change in our financial system was that the political autonomy of the Provinces under the Reforms scheme would have been incomplete without financial autonomy. The authors of the Indian Constitutional Reforms thought that the Provinces should not be dependent on the Central Government for carrying out any schemes of Provincial development. They attached very little importance to the argument that the authority of the Government of India would be lowered if the Provinces were freed from the financial control which it exercised over them. On the other hand, they thought it was impossible that the old system should work successfully under the new conditions, as a large popular element had deen introduced into the government of the Provinces while the Central Government was still an official government.

As a result of the proposed financial changes a large deficit in the Indian budget was anticipated. This was to be met by annual contributions of fixed amounts from the Provinces to the Central Governmeent. The rules framed under the Government of India Act (Sec. 45 A) in accordance with the recommendations of the Meston Committee provided for a total Provincial contribution of 983 lakhs in the financial year 1921-22.

From the year 1922-23 onwards the total Provincial contribution was to be 983 lakhs "or such smaller sum as may be determined by the Governor-General-in-Council." The percentage of this total amount to be paid in each year by each Local Government was definitely fixed.

In determining the scale of contributions, the Meston Committee took into consideration the indirect contributions of the provinces to the Government of India, and in particular the incidence of customs duties and of income tax, the industrial and agricultural wealth of the provinces with due regard to their liability to famine, and the capacity of each province for expansion and development agriculturally and industrially.

The Provincial contributions were not intended to be permanent.

The growth of revenue of the Central Government made it possible to remit the contributions in 1927 28 with the exception of a small sum, and they were finally abolished in 1928 29.

The reforms period began inauspiciously with deficits The deficits, in fact, had started much earlier in the year 1918 19, and ended only in the year 1923 24 The total amount of budget deficits in these five years was no less than 93 crores. Practically the whole of the deficit in 1919 20 (about 24 crores) was due to the Afghan War a large part of the deficit in 1920 21 (26 crores) was due to arrears of the same war

The deficits were met by the issue of fiduciary currency against the Government's own I. O U s and Treasury Bills. The situation was alarming and called for drastic remedies A Retrenchment Committee presided over by Lord Inchcape, was appointed in 1922 to overhaul expenditure. The reductions in expenditure recommended by this Committee amounted in the aggregate to Rs 18 crores

After a succession of deficit years a surplus was realised in 1923 24, and thereafter, till the advent of the trade depression, there were only minor changes in the tax system Military expenditure was brought down from about 88 crores in 1920 21 to about 55 crores, as recommended by the Retrenchment Committee of 1922

The financial situation before the trade depression, could, without exaggeration, be described as eminently satisfactory Financial stability had been attained in spite of the heavy sacrifice of revenue on the part of the Government of India 1¾ crores from the cotton excise, 85 lakhs from import duties on machinery, 1½ crores from opium, in addition to about 10 crores of Provincial Contributions In the five years ending 31st March, 1928, Government were also able to undertake a very large amount of capital expenditure, chiefly in connection with railways.

3. The Great Depression

Sir George Schuster took charge of central finances in 1929.

His review of general conditions in 1928 29 showed that while they were bad in patches, there was no ground for " serious pessimism". Besides, he was new to the country and wanted time to study more fully the expenditure side of the budget as well as economic conditions throughout the country.

In his next budget speech Sir George Schuster referred to the New York stock exchange crisis : " The collapse seems likely to result in a period of business stagnation in America, which has already produced a serious fall in the price of all commodities. While the effect of these events on monetary conditions in India has been apparent throughout the year under review [1929-30] the effect of the fall in prices on trade is only now beginning to be felt."

The depression, which was just beginning, produced deteriorations of revenue under Customs, Miscellaneous payments, Railways, Posts and Telegraphs and other heads.

An anticipated deficit of 150 lakhs was exactly balanced by a payment to India of 150 lakhs in connection with the German Liquidation Account under the Treaty of Versailles.

But the gap between income and expenditure had not been filled. There were some abnormally high receipts under particular heads (*e.g* , interest on the Gold Standard Reserve), and windfalls under other heads.

The financial position was not satisfactory in spite of the balanced budget for 1929-30. The estimates for 1930-31 showed a gap of 5½ crores between income and expenditure. Additional taxation provided for a surplus of 1 lakh, but there was a supplementary budget at the end of August 1931, for the returns for the five months, from April to August showed a heavy fall of revenue.

The increase in taxation took the form of a sur-charge of 25 per cent on the rates in force, lowering of the exemption limit of the income-tax to Rs. 1,000, curtailment of the list of goods imported free of duty, the imposition of special rates of duty on some imports (*e g*., boots and shoes and artificial silk piece-goods) and an enhancement of postal rates.

The justification for the proposals for new taxation was that India had abandoned the gold standard, and financial stability was essential if public confidence in the currency was to be maintained : "for once a country's currency is cut adrift from the moorings of a stable standard such as gold, it is particularly necessary to avoid getting into any sort of inflationary position resulting from a failure to balance current expenditure with current revenue." In the concluding portion of his speech the Finance Member again referred to the connection between budgetary deficits, note printing and collapse of confidence in a country's currency and said : " We want to erect a solid barrier against the possibility of India getting on to that slippery slope. That is the essential justification for our proposals."

The new proposals were meant not only for 1930-31 but also for the whole year 1931-32. Financial stability was attained once more and central finances continued to enjoy this stability till the outbreak of the present war, in spite of material sacrifices made by the Centre in the interests of provincial finance.

4. Provincial Finance : The Niemeyer Award.

Sir Otto Niemeyer reviewed ' the present and prospective budgetary positions' of the Central and Provincial Governments in 1936 and before the introduction of Provincial Autonomy under the Government of India Act of 1935. It was recognised that at the inauguration of Provincial Autonomy 'each of the Provinces should be so equipped as to enjoy a reasonable prospect of maintaining financial equilibrium' ; the chronic state of deficit into which some Provinces had fallen was also to be ended. To achieve these aims Sir Otto Niemeyer was (*i*) to determine the extent to which the Provinces would need special assistance, (*ii*) to consider how far the Central Government was in a position to render such assistance without jeopardizing its own solvency, and (*iii*) to suggest to what extent and when it might be possible for the Centre to place additional resources at the disposal of the Provinces out of the proceeds of the taxes on income.

Sir Otto found that the Central and Provincial Governments had gradually recovered from the effects of the economic depression, though recovery in the case of the Provinces was far from complete. The Central Government was enjoying surpluses as compared with deficits of over 11 crores in each of the years 1930-31 and 1931-32 in spite of the abolition of pay cuts, and the remission of most of the increase in rates of income-taxes and in spite also of the annual surrender since 1934-35 of nearly 2 crores of jute export duty to the jute-producing Provinces. The Provinces also showed a very substantial improvement over the deficit position of 1930-31, partly due to the financial assistance from the Centre.

Sir Otto, on the whole, took a favourable view of the financial situation. " Consumption taxes in the Provinces", he wrote, "might reasonably be expected to rise with consumption taxes (Customs and Excise) at the Centre" : he anticipated some expansion of Provincial expenditure from the recovery of Provincial resources, " not all of which are, or need be static." He concluded that, given prudent management of finances, adequate arrangements could be made 'step by step, to meet the financial implications of the Constitution,' and saw no reason ' why a cautious but steady advance should not be achieved.'

His examination showed that some Provinces were intrinsically better off than others, or needed less assistance from the Centre than others. The Provinces which stood most in need of help were Bengal (' clearly on a low standard'), Bihar and Orissa ('poorest Province in India'), the Central Provinces and the United Provinces. The immediate difficulties of the United Provinces were considerable. Sind and Orissa, the new Provinces, had 'special problems of their own.'

Bombay received annual relief to the extent of about 90 lakhs from the separation of Sind ; and Madras and Bihar about 20 lakhs and 8 lakhs respectively from the separation of Orissa. " Madras, Bombay and the Punjab," said Sir Otto " have certainly not the lowest administrative standards in India". He might have added that the Punjab was justly proud of possessing the highest administrative standards in India.

Financial assistance was granted to the following provinces in the form of subventions and grants-in-aid : Bengal, Bihar, Assam, N. W. F. P., Orissa, Sind, and U. P.

In addition, the jute-producing provinces were to receive 62½ per cent, instead of 50 per cent, of the net produce of the Jute Export Duty. This meant an additional revenue for Bengal of 42 lakhs, and smaller sums for Bihar, Assam and Orissa.

All debt contracted with the Centre prior to 1st April, 1936, by the following provinces was cancelled : Bengal, Bihar, Assam, N. W. F. P. & Orissa. The other Provinces benefited by debt consolidation.

The Provinces were granted a share in the income-tax. The divisible amount of the income-tax was fixed at 12 crores, of which, except under specified conditions, the Provinces were to eventually get 50 per cent, or 6 crores. The scale of distribution among the Provinces was fixed partly on residence and partly on population. The percentage share of the Provinces in the income-tax is : Madras 14, Bombay 20, Bengal 20, U. P. 15, Punjab 8, Bihar 10, C. P. 5, Assam 2, N. W. F. P. 1, Orissa 2 and Sind 2.

The total revenue of provincial governments in 1921-22 amounted to 70·4 crores (Central Government, 115·2 crores). The figures for 1938-39, by Provinces, are shown in the following statement :

Provincial Revenues, 1938-39

		Lakhs
Madras	...	16,13
Bombay	...	12,45
Bengal	...	12,77
U. P.	...	12,80
Punjab	...	11,36
Bihar	...	5,23
C. P. & Berar	...	4,27
Assam	.	2,58
N. W. F. P.	...	1,81
Orissa	..	1,82
Sind	..	3,70
Total	...	84,92

5. Review of 'Nation-Building'.

The expenditure on 'nation building departments' in the five major Provinces in 1938-39 is shown by the following statement :

		Total expenditure	Education	Medical	Public health	Agriculture	Industries
Madras	...	1610	262	98	27	21	28
Bombay	..	1280	191	45	28	15	9
Bengal	...	1277	155	56	41	14	18
U. P.	..	1280	209	36	25	55	19
Punjab	...	1161	161	53	20	86	19

A review of the working of provincial autonomy suggests the following conclusions :

1. In a technical sense the aim of the Niemeyer Report and Award was achieved. The state of chronic deficit in which certain Provinces had fallen was ended; financial stability was attained ; their resources were materially increased,

and they started their career as autonomous entities on an 'even keel.'

2. There is no major Province in which increased spending power is not being utilised for the expansion of constructive, nation-building activities. In every Province there is a keen desire to promote the well-being of the rural masses and to augment the sources of wealth-production in order to increase the income of the people. This task is being attempted in each Province within the limits of the resources of the Province.

3. But very little has been done to reduce the burden of rural taxation. The remissions in land revenue, where they were granted, were inadequate.

4. While the attempt to increase the income of the people by the improvement of agriculture and the marketing of agricultural produce deserves all praise, the main source of the agriculturist's income is the prices at which his crops are sold, and prices are beyond the control of Provincial Governments.

5. Cottage industries are being promoted in all Provinces, but they have little chance of survival in competition with machine industries. The development of factory industries depends on conditions determined by the Government of India.

6. The action taken to relieve agricultural indebtedness tended to destroy the foundations of rural credit.

7. There is no Province which could not usefully increase its expenditure on nation-building activities, in relieving indebtedness, and in reducing the burden of rural taxation. But no important new sources of revenue have been discovered. The main existing sources of Provincial revenues are largely rigid and inelastic.

The Congress Party Election manifesto (Bombay) had talked of 'giving immediate relief to the smaller peasantry by substantial reduction of agricultural rent and revenue now paid by them, and exempting uneconomic holdings from payment of rent and revenue.' The Bombay (Congress) Government failed to carry out their election promises. Dr. Ambedkar (then a member of the Opposition in the Bombay Legislative Assembly) wanted to know why the Finance Minister had 'eaten up his words'. The answer of the Government was, "We cannot mint new rupees, or print new currency notes." Provincial Ministers did not take very long to realize their limitations under provincial autonomy. Funds were needed for giving peasants relief from the heavy burden of rural taxation, and for development in many directions. These funds were simply not available. In the Frontier Province the Finance Minister in his budget speech for 1938-39 complained that the amount of subvention from the Centre "did not provide for normal expansion and for new items of expenditure on beneficent and nation-building schemes". He ended his speech with

> *"Cho 'ashaq me shudam guftam ke budam gauhar-i-maqsud,*
> *Na danistam ke een darya che mauj-i-bekiran darad."*

In two provinces, Bombay and Madras, nation-building included prohibition, which led to a sacrifice of revenue. In Sind, country liquour was made of 'weaker strength', which cannot be considered fair to the consumer.

6. Direct Taxes : The Income-tax.

Before concluding this section we may consider the reform of the direct taxes levied in India, the income tax on non-agricultural income, and the land revenue, which is paid out of agricultural income.

An Income Tax Enquiry Committee was appointed by the Government of India in 1936.

Its most important recommendation was the substitution of the 'slab' system in place of the 'step' system. The Committee condemned the step system on the ground that under this system the actual tax payable on various ranges of income was excessive as compared with that on incomes above and below. The 'slab' system is based on the application of progressive rates to successive slices of income.

The difference between the 'step' and the 'slab' system may be shown by an example.

If income amounts to Rs. 25,000, the tax payable under the step system was at the rate of 19 pies per rupee on the whole income *plus* 1/12 surcharge. This is equal to Rs. 2,680, or 10·7 per cent of the income.

Under the 'slab' system, the first slice of income, Rs. 1500, is tax-free. On the second slice of Rs. 3,500, the tax will be paid at the rate of 9 pies per rupee (Rs. 164). On the third slice of Rs. 5,000, 15 pies per rupee will be charged (Rs. 391); on the fourth slice of Rs. 5,000, 2 As. per rupee, (Rs. 625), and on the balance of Rs. 10,000, 2½ As. per rupee (Rs. 1,562). The total tax payable would be Rs. 2,742, which is 11 per cent of the income.

If the income is Rs. 4,000, under the slab system the tax will be payable only on Rs. 2,500 at the rate of 9 pies per rupee, or Rs. 117 (2·9 per cent of income), as compared with 3·4 per cent or Rs 135 under the 'step system' (6 pies per rupee on the whole income *plus* 1/12 surcharge).

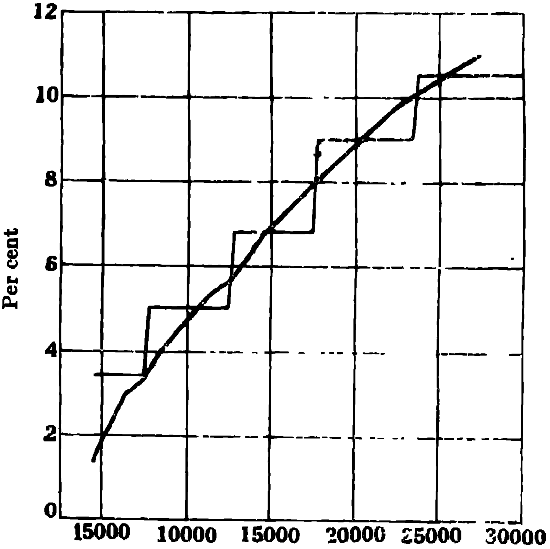


Fig. 35.

Illustrating the difference between the 'step' and the 'slab' system of income-taxation.

The reader's attention is drawn to Fig. 35, which explains why the old system was called the 'step' system. Under the 'slab' system, the percentage of income taken rises throughout gradually, not by 'steps'. The 'steps' disappeared under the old system, but only after Rs. 40,000.

The income-tax amendment Act was passed in 1939. Since then no alterations have been made in the basic rates, but surcharges have increased. The super-tax becomes payable at graduated rates when income exceeds Rs. 25,000. The basic rate of the tax on companies is 30 pies and that of the Corporation tax 12 pies per rupee on the whole of total income.

Income of residents in British India earned abroad.

Before 1939 the foreign income of residents in British India was taxed on the remittance basis, that is, only that part of the income arising abroad was taxed which was actually remitted to India. This led to fraudulent evasion of the tax and the investment abroad of income not brought to India, which adversely affected the supply of capital for Indian industry. The Income tax Enquiry Committee recommended the substitution of the accrual basis (taxation on the basis of the whole income accruing) for the remittance basis.

At present persons who are resident and ordinarily resident* in British India pay on income arising in British India, on foreign income brought into British India, and also on foreign income not brought into British India, with a deduction of Rs 4,500 on the last mentioned class of income. Where foreign income-tax is payable on income arising abroad, one-half of the Indian tax, or one-half of the foreign tax, whichever is lower, is allowed as a deduction from the tax payable.

No distinction is made in India, for the purposes of the income-tax, between earned and unearned incomes, nor are allowances given for children or dependents as in the United Kingdom.

We have as yet no death duties, but an estate duty on non-agricultural property is being considered by the Government of India. The Finance Member said in March 1944: "It is indisputable that enormous private fortunes have been made during the war, aggravating the great inequality which already existed" (Budget speech). Death duties may provide some money for post-war reconstruction.

7. The Land Revenue: A Tax or Rent?

The land revenue has been paid in India from time immemorial. What is the nature of the land revenue as it is levied at present?

*** To be resident a person must either be in British India for at least half the year or have a house maintained in British India and visit it at least once during the year. To be 'ordinarily resident' a person must have been resident for nine out of the previous ten years and must also have been in British India for 730 days in the previous 7 years. A company is deemed to be resident in India if it is controlled in India, or if more than half of its income arises in British India.**

The nature of the land revenue has formed the subject of a lengthy discussion.

In a minute written in 1875, Sir H. S. Maine answered the question whether the land revenue was or was not rent in the negative. It seemed to him incredible that since the beginning of history any Government should have taken the full economic rent of the land cultivated by its subjects. To do this it would be necessary for the Government to "put up the soil in parcels to competition," without recognizing any hereditary rights of property. "No evidence," said Sir H. S. Maine, "of any such system exists; some preferential rights, whether they can or cannot be called ownership, have always been acknowledged."

Such preferential rights which may be described as ownership, we may add, were recognised by the Moghul Kings. In the *Ain-i-Akbari*, Abul Fazal refers to owners of property who held their lands by ancestral descent:

"It is well known that in inhabited parts of the country there are numerous owners of property, who hold cultivable lands by ancestral descent" (Persian Text, A. S. B., vol. I., p. 290).

If then rights of property were recognised in India in pre-British days, how did the land revenue come to be looked upon as rent by the British Government? The burden of the land revenue under Indian rule was heavy—the State demand sometimes absorbed nearly the whole of the net income from cultivation. Rent and State ownership, according to Sir H. S. Maine, did certainly express to an English ear, better than any others, the nature of the right which was exercised by the Indian Government. The morality current in England did not forbid the exaction of an extreme rent from a tenant, just as the morality current in India did not forbid the exaction of excessive contributions from a subject in virtue of the land which he occupied. Under Indian rulers, then, the land revenue was a tax, but it was so heavy as to be equal to an extreme rent. Our British rulers mistook it for rent.

In a minute, also written in 1875, Sir Louis Mallet emphasized the importance of distinguishing between rent and revenue. This was not a question of words to the cultivator. Sir Louis Mallet protested against the policy of resisting and removing taxes such as income-tax and Customs, and adding to the charge laid on the land in order to provide the sums needed for public works, education, health, famine, and other beneficent objects. He described that policy as 'communistic'.[1] "I shall rejoice to see a limit placed on future assessments," he said, "with a view to which the renunciation of the theory of State landlordism would be the most effectual step."

Under which theory can the State demand more revenue from the cultivator? Under the rent theory, Lord Salisbury (Secretary of State for India, who took a share in this controversy in 1875) pointed out, the State would be obliged to leave wages and profits to the cultivator—it could take only the surplus produce of the soil. Under the tax-theory, on the other hand, the State might take whatever it pleased: the cultivator's payments would be limited only by the power of mercy of the Government. "It speaks boldly for the character of British rule," added his Lordship, "that the advocates of the Ryot call for the application of the tax theory." He agreed with Sir Louis Mallet that the "nondescript land dues should tend to the form of revenue rather than that of rent."[2]

---

[1] 'So long as the exactions from the land by the State were levied by the Company as the inheritor of the despotic Governments, and frugally dispensed in the several functions of administration, or even sent in the form of tribute to England, I can understand the Indian people accepting their condition. But when the sums so taken are largely spent, as they now are for the avowed purpose of benefiting the Indian Empire and people at large, on public works, education, health, famine, and all the objects which, under the influence of modern ideas, fall within the province of State expenditure, and attempts are made more and more to resist and remove taxes such as income-tax and customs, which fall on other than the landholding classes, while to meet the increasing burdens of the State additional charges are laid on the land, may they not awaken to the fact that they are being made the subject of an experiment, which, I venture to think in spite of Sir H S Maine's criticism, can only be appropriately described, where it is found, as 'communistic'

"From this point of view, the policy of further taxing the land might easily become a political danger, and the large margin on which, under the rent theory, the State has a right, if it be not a duty, to encroach, lends itself too easily to such an extension." (Sir Louis Mallet's Minute, 1875).

[2] "To the modern Indian statesman the refined distinctions of the economical school are a solid living reality, from which he can as little separate his thoughts as from his mother tongue. To us it may seem indifferent whether we call a payment revenue or rent, so long as we get the money; but it is not indifferent by what name we call it in his hearing. If we say that it is rent, he will hold the Government in strictness entitled to all that remains after wages and profits have been paid, and he will do what he can to hasten the advent of the day when the State shall no longer be kept by any weak compromises from the enjoyment of its undoubted rights. If we persuade him that it is revenue, he will note the vast disproportion of its incidence.

The occasion which gave rise to this instructive discussion 60 years ago was a difference of opinion between the Governor of Madras and his Council regarding the power of the Local Government to increase the assessment.

8. Who is the Owner ?

The question was re discussed in detail by the Indian Taxation Enquiry Committee of 1924-25. On the question whether the State claimed exclusive proprietary rights over the land under Hindu and Mohammadan rule, the Committee quotes from the judgment of the Bombay High Court in a case from Kanara disposed of in 1875 (p. 61):

"This review of the authorities leads us to the conclusion arrived at also (after careful discussion of the question) by Prof. H. H. Wilson that the proprietary right of the sovereign derives no warrant from the ancient laws or institutions of the Hindus and is not recognised by Hindu lawyers as exclusive or incompatible with individual ownership."

Colonel Galloway, a recognised authority on the subject of Indian land tenures under Mohammadan rule, says:

"The soil was the property of the cultivator as much as it could be. Law gave no power, policy gave no motive to remove him, so long as he paid his taxes. When he did not, his lands could be attached; and so can those of the first *peer*, holding by the firmest tenure of the English law. The right of the Indian husbandman is the right of possession and of transfer; and the rate of his land-tax was fixed; often indeed the amount. In what respect, then, is his right of property inferior to that of the English landholder?" (*Report of the Taxation Enquiry Committee*, p. 62).

---

compared to that of other taxes, and his efforts will tend to remedy the inequality, and to lay upon other classes and interests a more equitable share of the fiscal burden.

"I prefer the latter tendency to the former. So far as it is possible to change the Indian fiscal system, it is desirable that the cultivator should pay a smaller proportion of the whole national charge. It is not in itself a thrifty policy to draw the mass of revenue from the rural districts, where capital is scarce, sparing the towns, where it is often redundant and runs to waste in luxury. The injury is exaggerated in the case of India, where so much of the revenue is exported without a direct equivalent As India must be bled, the lancet should be directed to the parts where the blood is congested, or at least sufficient, not to those which are already feeble from the want of it" (Lord Salisbury's Minute, 1875).

The Taxation Enquiry Committee concluded :

"On these two points the Committee are unanimously of opinion that, under both Hindu and Mohammadan rule, the State never claimed the absolute or exclusive ownership of the land and definitely recognised the existence of private property in it" (p. 62).

Thus the land revenue is not of the nature of rent It is a tax. Let it be a tax on things and no on persons, but it is a tax all the same.

As a tax the land revenue is of a very peculiar nature. It is different from the land tax of any other country. In other countries, as the Taxation Enquiry Committee pointed out, the land tax is levied at a definite rate upon a definite basis of assessment. The incidence of our land tax on different holdings varies very greatly In one case land revenue may take only a small fraction of the 'net income' from cultivation, in another case it may absorb the whole of the 'net income', and even exceed it. There is no definite basis of assessment: it may be rentals or net assets. "The rentals may be customary, controlled or assumed. The net assets may include or exclude the subsistence of the cultivator" (p. 77). No definite principles govern the rate of assessment imposed it may depend on the will of the Local Government, or the view of the settlement officer of the economic conditions of the tract or of the District at the time of settlement, or on the conditions of tenancy.

The Committee also drew attention to other serious defects of the land revenue system. The land revenue the Committee said, "viewed as a scheme of taxation, is not only not progressive, but actually tends in the opposite direction." The land revenue imposes heavier burdens on the poorer landowners. But how can a tax on things be made progressive? The Committee referred to the creation of a very large number of uneconomic holdings, the holders of which pay land revenue which would be inconsiderable if cultivation were intensive or on a large scale, but rests as a heavy burden upon a small and impoverished holder" (p. 78).

In European countries and Japan, in addition to a light land-tax there are death duties and a tax on agricultural income. Land taxation is thus made progressive on the whole. These

INDEX

Age composition of population, 20
Agrarian legislation, Punjab, 190 ; other provinces, 194
Agriculture, financing of, Ch. XII; handicaps and peculiarities of, 273 ; Reports on, 50 ; the State and, 50
Agricultural research, 52
Agricultural statistics, 70

Bankers, indigenous, 239
Banking, Ch. X, foreign expert advice, 203 ; banking facilities in India, whether adequate, 242 ; State-aid in Japan, 264
Banks, industrial, 262 : Indian Joint-stock, 240
Bills, scarcity of, 249
Birth and death rates, 12
Bullocks, 61

Census, 1941, method, 1 ; and communalism, 1 ; new features of, 2 ; rationalisation of census, 2
Central bank for India, 243 ;
Central banking in India, 251
Chain index, 86
Chamberlain Currency Commission, 208 ; and a gold currency, 209
Coal, industry, 85
Communities, distribution by, 32
Co-operation, agricultural non-credit, 282 ; urban, 283
Co-operative credit, Act of 1904, 274 ; Act of 1912, 276 ; in the Punjab, 276 ; progress of movement, 278 ; and the Great Depression, 279
Co-operative trends, 281 and Appendix E
Correlation between credit and princes, 253 ; between bullocks and cultivators, 60 ; between cultivators and size of holding 58
Correlation coefficient (credit and prices), 256
Cottage industries, 82, 135, Appendix *B*.
Cotton mill industry, 92
Cotton weaving in Moghul times, 154
Crops, improved varieties of, 58 ; yield of, 68
Currency and exchange, Ch. IX
Curve fitting, Appendix A

Education, progress of, 183 ; technical, 136
Elasticity of currency, 248
Emigration, 8
Employment Bureau, 137
Expectation of life, 26
Exchange (rupee) in 1920, 214 ; 18*d*. gold, 226 ; and the cultivator, 228 ; a high, 213 ; and prices, 229 ; and price of silver, 216 ; 1861-1891, 232 ; 1924-25, 233

Factory legislation, 110
Farm relief in other countries, 188
Finance, Central and Provincial, Ch. XII ; separation of Provincial ; from Central, 292
Federal Railway Authority, 148
Fiscal Commission, 161
Foreign trade, Ch VII ; in Moghul times, 152 ; 1873-95, 202 ; in the Great Depression, 183
Frequencies of rates of wages, 121
Frequency curves, 130

Gold bullion standard, 219
Gold, as currency, 196 ; currency for India, 209 ; 223-24
Gold exchange standard, 205 ; defects of, 223 ; and price of silver, 211-12
Gold exports, 166
Gold, flow of, to India, 225
Gold, price of, 167
Great Depression, the, and railways 145 ; fall of prices due to, 183 ; causes of, 186 ; recovery from, 187

Hindus, proportional strength of 33
Holdings, owners' and cultivators' in the Punjab, 54 ; sub-division and fragmentation of, 54 ; size of, in relation to number of cultivators, 58 ; uneconomic 57

Imperial Bank of India, 237
Imperial Preference, 159
Income-tax, 300
Indianisation (railways), 144
Indigenous bankers 255
Industrial banking in Japan, 261 ; in France, 268 ; in Germany, 266
Industrial banks, 262
Industries, manufacturing, Chap, III ; Government policy in regard to, 88
Industrial disputes, 115
Industrialisation 138
Industry, financing of, Ch XI
Iron and steel, 90

Jute, 99
Joint-stock banks, Indian, 240

Labour Commission, Indian, 108
Labour problems, Ch. IV
Labour, in organised industry, 81
Land mortage banks, 280
Land revenue, as a tax 306 ; a tax or rent ? 302 ; in the Punjab, 308
Literacy, 32

Managing agency system, 260
Marketing (of agricultural produce) 63 ; functionaries, 65
Markets, regulated, 66
Marriage, 25
Match industry, the 95
Milk and ghi, 63
Mineral production 84
Mines 112
Mortality from disease 12
Moving averages, 176
Multi-purpose society 280

'Nation building' review of 298
Net-assets, calculation in money, 310 ; as profits on direct cultivation, 312
Niemeyer Award, 296

Ownership of land, 305
Over-population, 36
Ottawa Agreement, 163

Paper industry, 97
Population distribution of 3 ; future growth of, 34 ; movement of, 9 ; pressure on agricultural resources, 6 ; Ch. I
Prices, Indian, Ch. VIII ; and credit, 179 ; 1861-1905, 171 ; 1905-1914, 177 ; price of wheat, retail (1861-1910), 17[illegible]
Profits, industrial, 87
Protection, 90
Provincial contributions, 293

Railway finance ; 141
Railways, Ch. VI ; the State in relation to, 141 ; State *versus* Company management of, 147
Rail-road competition, 149
Reproduction rates, gross and net, 16
Revenue and expenditure, Central 1913-14 to 1920-21, 291
Reserve Bank of India, 245 ; and exchange, 250 ; and indigenous bankers 255
Reverse bills, 210

Self-sufficiency, rural, 23
Sex ratio, 24
Shops' legislation 116
Sliding scale (land revenue), 312
Silver, fall in value of (1873), 199
Slab and step system (income tax), 300
Standard of living (labour), 117
State-bank *versus* share-holders' bank, 244
Sterling exchange standard, 236
Subsidiary occupations, 67
Sugar industry 94
Survivors, curve of, 27

Tariffs, Ch. VII ; in Moghul times 157
Taxable capacity, 317
Tea industry, 101
Town and country, 28
Trade Unions 126

Uneconomic holdings 57
Unemployment, rural, 67 ; educated, Ch. V

Wages payment of, 112 ; on Assam tea plantations, 125
War (1914-18), effect of, on industries, 88
Water-logging, 77
Water rates in the Punjab, 75
Workmen's compensation, 114

This book was taken from the Library on the date last stamped. A fine of ½ anna will be charged for each day the book is [illegible] due.